KANSAS CITY KANSAS PUBLIC SCHOOLS

6th grade
Continuous Learning Packet
April and May 2020

For students who do not have a computer or reliable internet access, learning packets will be distributed the week of April 6th. Please know that these packets are intended to provide support for continuous learning as we are away from our schools during this time. Learning is retained when we consistently practice. Please pace out the amount of work your child completes daily. We hope you enjoy "practicing" while you are home. Thank you for being partners in this work – we appreciate your dedication to helping our students succeed.

English Language Arts/Literacy

Grade: 6

April 6-17, 2020

Passage 1: What is a Pandemic?

I. BEFORE READING (PREVIEW):

1) Scan all of the **text features** of the passage on pages 3-4 (below)
(Do not read the text yet, just read and look at the **text features**.)

What are text features? Titles, subtitles, pictures, graphs, bold-faced words, anything the author does to help you understand the text.

2) Based on the text features, what is the **topic**?

_____

3) Brainstorm what you know (your **schema**) about this **topic**.
(What have you watched, read, experienced, heard, about this topic in the past?)

4) Write a prediction about the author's message in this text using all of the words below. If a word is unfamiliar try https://www.wordsmyth.net/ for definition, synonyms, images, and sentences using the word.

epidemic, pandemic, virus, outbreak, immunity, mortality, originated

You can add endings to words as needed.

5) **Your purpose question is:** ***What impact does disease have on societies?***
(As you read, your purpose will be to identify evidence to answer this question.)

II. NOW IT'S TIME TO READ:

READ & ANNOTATE on the text below using the following key. ***Use all of the annotation marks*** *at least once and explain your thinking about each annotation mark in the margin.*

ANNOTATION KEY:

?	Words, phrases, and sentences that cause confusion. **Write a question about your confusion in the margin.**
○	Important, unfamiliar words (circle)
!	Main/central ideas (What is important to the author's message?)
#	Connections to prior experiences or learning. **Write about your connection in the margin.**

What is a Pandemic?

Kimberly Hickock, March 13,2020

https://www.livescience.com/pandemic.html

An influenza ward at a U.S. Army Camp Hospital in France during the Spanish flu pandemic of 1918.

(Image: © Shutterstock)

A pandemic is the global outbreak of a disease. There are many examples in history, the most recent being the COVID-19 **pandemic**, declared as such by the World Health Organization on March 12, 2020. Pandemics are generally classified as **epidemics** first, which is the rapid spread of a disease across a particular region or regions. The

Zika **virus outbreak** that began in Brazil in 2014 and made its way across the Caribbean and Latin America was an epidemic, as was the Ebola outbreak in West Africa in 2014-2016. The U.S. has been experiencing an opioid epidemic since 2017 because of the widespread misuse and high numbers of deaths caused by the drug, according to the U.S. Department of Health and Human Services.

COVID-19 began as an epidemic in China, before making its way around the world in a matter of months and becoming a pandemic. But epidemics don't always become pandemics, and it's not always a fast or clear transition. For example, HIV was considered an epidemic in West Africa for decades before becoming a pandemic in the late 20th century. Now, thanks to advances in modern medicine, HIV is considered endemic, which means the rate of the disease is stable and predictable among certain populations, according to the American Medical Association.

Modern flu pandemics

Most virus pandemics have been caused by influenza (flu) viruses. Flu viruses can change from season to season and while health professionals are pretty good at predicting how the virus will change, occasionally a new virus pops up that doesn't behave as predicted. That's when a pandemic is most likely to occur because most people don't have **immunity** to the new virus.

The most deadly pandemic in history was the Spanish flu of 1918. The virus infected an estimated one-third of the world's population and was responsible for causing between 20 million and 50 million deaths — that's an estimated 1% to 3% **mortality** rate. The virus didn't **originate** in Spain, but the country was the first to report on the outbreak, so people began calling it the Spanish flu (the Spanish thought it started in France and called it the "French flu").

III. AFTER READING (RECALL):

SUMMARIZE: Now that you have read and annotated this article, summarize the author's position/message using the following vocabulary:

epidemic, pandemic, virus, outbreak, immunity, mortality, originated

You can add endings to words as needed.

RELATE: What connections can you make to what you see and know about the world right now? What thoughts or opinions do you have about this topic?

REFLECT on the PURPOSE QUESTION:

Based on your reading so far, **how do you think** a pandemic could affect a society? Use one pandemic example from the text, and **explain how you think** it affected people in a society.

Passage 2: How the Devastating Flu of 1918 helped Advance US Women's Rights

I. BEFORE READING (PREVIEW):

1) Scan all of the **text features** of the passage on pages 7-8 (below)
   (Do not read the text yet, just read and look at the **text features**.)
2) Based on the text features, what is the **topic**?

   _____

3) Brainstorm what you know (your **schema**) about this **topic**.
   (What have you watched, read, experienced, hear, about this topic in the past?)

4) Write a prediction about the author's message in this text using all of the words below. If a word is unfamiliar try https://www.wordsmyth.net/ for definition, synonyms, images, and sentences using the word.

social change, epidemic, suffrage, epidemic, empower, women, right to vote, discrimination

You can add endings to words as needed.

5) **Your purpose question is:** ***What impact does disease have on societies?***
   (As you read, your purpose will be to identify evidence to answer this question.)

II. NOW IT'S TIME TO READ:

READ & ANNOTATE on the text below using the following key. ***Use all of the annotation marks*** *at least once and explain your thinking about each annotation mark in the margin.*

ANNOTATION KEY:

?	Words, phrases, and sentences that cause confusion. **Write a question about your confusion in the margin.**
○	Important, unfamiliar words
!	Main/central ideas (What is important to the author's message?)
#	Connections to prior experiences or learning. **Write about your connection in the margin.**

The Conversation, **March 1, 2018**

Introduction: One hundred years ago, a powerful strain of the flu swept the planet, infecting one third of the world's population. The results of this disaster, too, led to unexpected **social changes**, opening up new opportunities for women and in the process irreversibly transforming life in the United States.

The virus disproportionately affected young men, which in combination with World War I, created a shortage of labor. This gap enabled women to play a new and indispensable role in the workforce during the crucial period just before the ratification of the 19th Amendment, which granted women **suffrage** in the United States two years later.

Flu brought more women into the workforce

The seriousness of the **epidemic** in the U.S. was enough to temporarily shut down many businesses in 1918. In New England, coal deliveries were so severely affected

that people, unable to keep their homes heated, froze to death at the height of winter. During the 1918 flu outbreak, researchers estimate businesses in Little Rock, Arkansas, saw a decline of 40 to 70 percent.

The worker shortage caused by the flu and World War I opened more jobs for women, and in higher numbers than ever before they took jobs outside the home. After the war ended, , the number of women in the workforce was 25 percent higher than it had been before the war and by 1920 women made up 21 percent of all gainfully employed individuals in the country. While this increase in women at work is believed to be caused by World War I alone, women's increased presence in the workforce would have been far less significant without the 1918 flu.

How the flu helped change people's minds

Increased participation in the workforce allowed many women to obtain social and financial independence. Leadership positions within the **workforce** could now be occupied by women, especially in the garment industry, but also in the military and police forces. The U.S. even got its first woman governor, when Nellie Taylor Ross took her oath of office, in 1923, in Wyoming. Women were empowered to make more decisions about their person and professional lives.

With the war over and more women in the workforce, politicians could not ignore the important role that women played in American society. Even President Woodrow Wilson began to argue in 1918 that women were part of the American war effort and economy more broadly, and as such, should be given the **right to vote**.

Outside of work, women also became more involved in community decision-making. Women's changing social role increased support for women's rights. In 1919, the National Federation of Business and Professional Women's Clubs was founded. The organization focused on ending sex **discrimination** in the workforce, making sure women got equal pay and creating an equal rights amendment.

III. AFTER READING (RECALL):

SUMMARIZE: Now that you have read and annotated this article, summarize the author's position/message using the following vocabulary:

social change, epidemic, suffrage, epidemic, empower, women, right to vote, discrimination

You can add endings to words as needed.

RELATE: What connections can you make to what you see and know about the world right now? What thoughts or opinions do you have about this topic?

REFLECT on the PURPOSE QUESTION:

Based on your reading so far, what were the ways the flu pandemic of 1918 impacted the lives of women in American society? Cite evidence from the text to explain your answer.

Passage 3: Three Ways the Coronavirus is Changing Society & Human Interaction

I. BEFORE READING (PREVIEW):

1) Scan all of the **text features** of the passage on pages 11-12 (below)
   (Do not read the text yet, just read and look at the **text features**.)
2) Based on the text features, what is the **topic**?
   _____
3) Brainstorm what you know (your **schema**) about this **topic**.
   (What have you watched, read, experienced, heard, about this topic in the past?)

4) Write a prediction about the author's message in this text using all of the words below. If a word is unfamiliar try https://www.wordsmyth.net/ for definition, synonyms, images, and sentences using the word.

pandemic, fragility, denial, social relations, nationalism, dependence, common good

You can add endings to words as needed.

5) **Your purpose question is:** ***What impact does disease have on societies?***
   (As you read, your purpose will be to identify evidence to answer this question.)

II. NOW IT'S TIME TO READ:

READ & ANNOTATE on the text below using the following key. ***Use all of the annotation marks*** *at least once and explain your thinking about each annotation mark in the margin.*

ANNOTATION KEY:

?	Words, phrases, and sentences that cause confusion. **Write a question about your confusion in the margin.**
○	Important, unfamiliar words (circle)
!	Main/central ideas (What is important to the author's message?)
#	Connections to prior experiences or learning. **Write about your connection in the margin.**

Three Ways the Coronavirus Pandemic is Changing Society and Human Interaction...

https://www.buisnessinsider.com

For most Americans, the coronavirus **pandemic** represents a completely original life-saving situation.. No event in recent history has affected us as deeply.

Not only does it remind us of our physical **fragility**, it damages the economy, throws daily routines topsy-turvy, ruins plans, and isolates us from friends and neighbors.

The pandemic affects our psyches three ways: It influences how we think, how we relate to others, and what we value.

This **crisis** has induced wide reaching fear and worry. We do not know what to think, or how to handle these completely unfamiliar circumstances. Who will be affected? Will our loved ones? How quickly? Will tests be available? Will we survive? How long will this last? What about our work? Our income?

The combination of uncertainty and danger is a recipe for severe stress. Under conditions of uncertainty, people are drawn, as if by a magnet, to simple solutions and black-and-white reasoning. Some gravitate to the pole of **denial** that nothing is wrong at all, others to that of utter panic, the belief that the worst is sure to come, and that the end is near. Rumors are circulated widely and seized upon uncritically.

When their need for closure rises, people become "group-centric," which means they need connection and unity. Patriotism is elevated but so, often, is **nationalism**, the idea

that our nation is superior to others, better at handling the crisis that foreigners have propagated to begin with.

The coronavirus pandemic is scary. Everyone can be infected. No one is exempt. No matter what your station in life, your status, power or popularity, the virus still can get you. This possibility evokes an overriding sense of weakness.

This prompts putting **social relations** at a premium, strengthening one's attachment to others, boosting the appreciation of one's loved ones, family, and friends.

One consequence of our helplessness in a pandemic is our greater sociability, a yearning for warmth and help, the realization that we need others, that we cannot hack it alone.

Our cultural beliefs change with this. In times of crisis, we celebrate others who sacrifice their self-interests for the **common good**, exhibit empathy, and model humanity. Fascination with fame and riches is disappears; it takes a back seat to admiration for simple acts of kindness.

The coronavirus pandemic alters who we are, much of our personality.

We may approve of some of the changes — toward stronger communal bonds and **humanitarian** values — and disapprove of others — closed-mindedness, black-and-white thinking. Whether we like it or not, the immense crisis we are facing brings out the best in us, but also the worst in us.

III. AFTER READING (RECALL):

SUMMARIZE: Now that you have read and annotated this article, summarize the author's position/message using the following vocabulary:

pandemic, fragility, denial, social relations, nationalism, dependence, common good

You can add endings to words as needed.

RELATE: What connections can you make to what you see and know about the world right now? What thoughts or opinions do you have about this topic?

REFLECT on the PURPOSE QUESTION:

Based on this passage, what were the ways Coronovirus (Covid-19) pandemic is changing our society? Cite evidence from the text to explain your answer.

RAFT WRITING RESPONSE

Directions:

1. Decide which RAFT exercise you want to do. Always read across the chart.
2. Look at the 1st column of ROLES. A role is the person you are pretending to be. This is the voice you will write from. Select a role that interests you.
3. Who is the AUDIENCE you will be writing to? You must write to the AUDIENCE that matches the ROLE you chose.
4. Look at the 3rd column that goes with your ROLE. THe FORMAT is the way you will write to your AUDIENCE.
5. What will you write about? What will a writer in the ROLE you chose, know about the topic in the 4th column? You will use evidence from the 3 texts you read to write about this TOPIC.
5. You have 4 options; choose 1 to guide your writing. Write 3 -5 paragraphs based on the row you choose from the chart below.

ROLE (you)	AUDIENCE	FORMAT	TOPIC
History teacher	Students	Lecture for a class	What have we learned about society from past pandemics?
Sick person in a hospital	Family members	Journal	What is it like to have this virus and how has it changed you?
Parent in the US	Other parents in other countries	Facebook	What is it like to help children in virtual school during a pandemic?
Student learning from home	Children in the future	Short story	What is it like to be in virtual school during a pandemic?

English Language Arts/Literacy

Grade: 6

April 17 - May 1, 2020

Passage 1: What is Climate and Climate Change?

I. BEFORE READING (PREVIEW):

1) Scan all of the **text features** of the passage on pages 17-19 (below)
(Do not read the text yet, just read and look at the **text features**.)

What are text features? Titles, subtitles, pictures, graphs, bold-faced words, anything the author does to help you understand the text.

2) Based on the text features, what is the **topic**?

_____

3) Brainstorm what you know (your **schema**) about this **topic**.
(What have you watched, read, experienced, heard, about this topic in the past?)

4) Write a prediction about the author's message in this text using all of the words below. If a word is unfamiliar try https://www.wordsmyth.net/ for definition, synonyms, images, and sentences using the word.

Climate, climate change, greenhouse gas, weather, efficiently, global warming, energy, water

You can add endings to words as needed.

6) **Your purpose question is:** ***How does climate change impact me?***
(As you read, your purpose will be to identify evidence to answer this question.)

II. NOW IT'S TIME TO READ:

READ & ANNOTATE on the text below using the following key. ***Use all of the annotation marks*** *at least once and explain your thinking about each annotation mark in the margin.*

ANNOTATION KEY:

?	Words, phrases, and sentences that cause confusion. **Write a question about your confusion in the margin.**
○	Important, unfamiliar words (circle)
!	Main/central ideas (What is important to the author's message?)
#	Connections to prior experiences or learning. **Write about your connection in the margin.**

What is Climate and Climate Change?

https://newsela.com/read/lib-nasa-climate-and-climate-change/id/24135/

The **climate** of an area is its average weather. For example, the climate of Hawaii is sunny and warm. But the climate of Antarctica is freezing cold. Earth's climate is the average of all the world's regional climates.

So **climate change** is a change in the average weather of an area or a city. This could be a change in an area's average yearly rainfall, for example. Or it could be a change in a city's average temperature for a certain month.

Climate change is also a change in Earth's overall climate. This means a change in Earth's average temperature. Or it could be a change in Earth's overall rain or snow.

What Is The Difference Between Weather And Climate?
Weather means a short-term change. This could be a change in temperature, clouds, rain or snow. Weather can change a lot. It can be different from one day to the next. It can even be different within the same day. It might rain one morning. Then it might be sunny that afternoon.

The climate is the average weather of an area. It is averaged over many years. This is usually different for different seasons. For example, one area may be snowy during the winter. Another area may be warm during the winter.

The climate changes slowly. It can take as long as thousands of years to change.

Is Earth's Climate Changing?
Earth's climate is always changing. It has gone through warmer and cooler periods. Each period lasts thousands of years.

Earth's climate has been getting warmer. Its average temperature has risen a little more than 1 degree Fahrenheit. This has happened during the past 100 years or so. These small temperature changes have big effects.

What Is Causing Earth's Climate To Change?
Some causes of climate change are natural. Volcanic eruptions are one example.

But the warming isn't just because of nature. Most of the warming since the mid-1900s is from the activities of people. We have burned coal, oil and gas. We do this for energy. When we use coal, oil, and gas, we let out **greenhouse gases**. Greenhouse gases trap heat in the air.

What Is The Forecast For Earth's Climate?
Scientists use models and math to guess how Earth's climate will change. They think the average temperature will keep rising over the next 100 years or so. There may be a year or years where Earth's average temperature is steady or even falls. But overall, the temperature should rise.

What Is The Impact Of Earth's Warming Climate?
We can already see some of the effects of increased temperatures. For example, sea levels are rising, snow and ice cover is decreasing, and growing seasons are changing.

The warming climate likely will cause more floods, periods of no water and heat waves. The heat waves may get hotter, and hurricanes may get stronger.

What Is The Difference Between "Climate Change" And "Global Warming"?
"**Global warming**" refers to the long-term rise in Earth's average temperature.

"**Climate change**" refers to any long-term change in climate. This includes warming, cooling and changes besides temperature.

How Does NASA Study Climate Change?
NASA can study Earth's land, air, water and ice from space. Scientists also study the sun and the amount of energy coming from it. This is important for understanding how Earth's climate works and predicting changes.

What Is Being Done About Climate Change?
Many countries are taking steps to cut back greenhouse gases. This means not wasting

energy. It also means using more clean energy. The sun, wind and water are sources of clean energy. They will not give off greenhouse gases that trap heat.

What Can You Do To Help?
You can do your part by using less **energy** and **water**. For example, turn off lights and TVs when you leave a room and turn off the water when brushing your teeth. You can help by planting trees, which take greenhouse gases out of the air.

Another way to help is by learning about Earth and its climate. The more you know about how Earth's climate works, the more you'll be able to help solve problems related to climate change.

III. AFTER READING (RECALL):

SUMMARIZE: Now that you have read and annotated this article, summarize the author's position/message using the following vocabulary:

Climate, climate change, greenhouse gas, weather, efficiently, global warming, energy, water

You can add endings to words as needed.

RELATE: What connections can you make to what you see and know about the world right now? What thoughts or opinions do you have about this topic?

REFLECT on the PURPOSE QUESTION:

Based on your reading so far, **how do you think** the current and future climate changes affect you here in Kansas City? Use text evidence about climate change in the passage you read to support your claim.

Passage 2: Climate Change in the U.S Great Plains

I. BEFORE READING (PREVIEW):

1) Scan all of the **text features** of the passage on pages 22-24 (below)
   (Do not read the text yet, just read and look at the **text features**.)
2) Based on the text features, what is the **topic**?
   _____
3) Brainstorm what you know (your **schema**) about this **topic**.
   (What have you watched, read, experienced, hear, about this topic in the past?)

4) Write a prediction about the author's message in this text using all of the words below. If a word is unfamiliar try https://www.wordsmyth.net/ for definition, synonyms, images, and sentences using the word.

Great Plains, climate change, ecosystems, increased,irrigation, agriculture, drought

You can add endings to words as needed.

5) **Your purpose question is:** ***How does climate change affect me?***
   (As you read, your purpose will be to identify evidence to answer this question.)

II. NOW IT'S TIME TO READ:

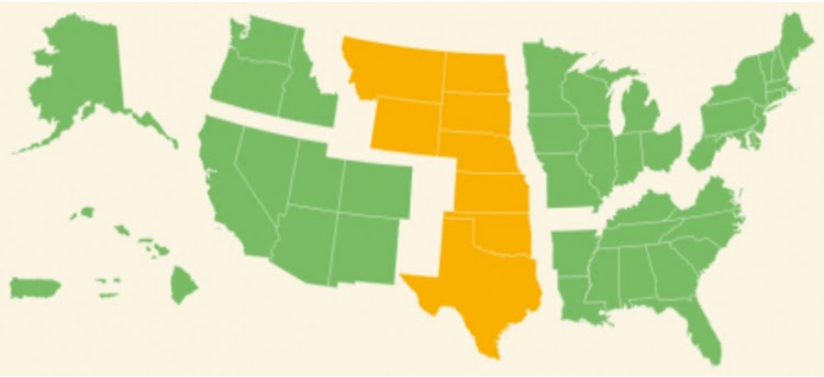
READ & ANNOTATE on the text below using the following key. ***Use all of the annotation marks*** *at least once and explain your thinking about each annotation mark in the margin.*

ANNOTATION KEY:

?	Words, phrases, and sentences that cause confusion. **Write a question about your confusion in the margin.**
○	Important, unfamiliar words
!	Main/central ideas (What is important to the author's message?)
#	Connections to prior experiences or learning. **Write about your connection in the margin.**

Climate Change in the U.S. Great Plains

https://newsela.com/read/govt-EPA-climate-great-plains/id/28423/



The Great Plains extends down the middle of the United States. The region covers the states of Montana, Wyoming, North Dakota, South Dakota, Nebraska, Kansas, Oklahoma and Texas. Map: EPA.gov.

Overview

The Great Plains stretch from Canada to Mexico across the middle of the country. They are made up of flat plains. The Plains are made up of many kinds of ecosystems. They include forests, marshes and desert. The region has very different climates. Different areas have different temperatures and amounts of rain and snow.

The region experiences a wide range of temperatures. In the mountains of Montana and Wyoming, average temperatures are less than 40 degrees Fahrenheit. In southern Texas, it is 70 degrees Fahrenheit. Temperatures are warming across the Great Plains. North Dakota's average temperature has increased faster than any other state in the lower 48 states. The number of days with temperatures over 100 degrees Fahrenheit are expected to double in the northern Plains by 2050. The southern Plains may experience worse heat, with four times the number of days over 100 degrees Fahrenheit than it currently gets. Higher temperatures lead to greater evaporation and

surface water losses, leading to less drinking water. Also, higher temperatures mean more energy and electricity is needed for air conditioning.

Average rainfall in the Great Plains changes as you go from east to west. Eastern Texas and Oklahoma experience more than 50 inches a year. Parts of Montana, Wyoming and western Texas receive less than 15 inches a year. Future patterns will change across the region. In northern states, rain and snow will increase. In the central Great Plains, less rainfall is expected. This could lead to drier summers. Southern states will experience longer periods without rainfall.

Effects On Communities

Climate change hits young, elderly, ill and poor people the hardest. The Great Plains has 70 native tribes. They have fewer hospitals and less access to health care to protect them.

Climate change is also affecting tribal way of life. Some culturally important plants and animals have disappeared. Spring has been coming earlier, which changes when they can have certain events.

Effects On Water

Water in this region comes mostly from the High Plains Aquifer system. An aquifer is a way for water to travel underground. The High Plains Aquifer runs beneath parts of eight states. It also provides drinking water for more than 80 percent of the people living above it. The region also uses it to produce energy through dams.

More water leaves the aquifer than comes in. It goes out through irrigation. Irrigation is what farmers use to water plants without rain. The average water level has gone down by 14 feet since irrigation started around 1950. Water returns to the aquifer from rain and snow. In the northern Great Plains, rain can recharge the aquifer quickly. However, climate change might increase flooding, causing dirtier water and washing away soil. In the southern part, with less rain and snow, the aquifer's water level goes down even more. Climate change could worsen this situation by causing drier conditions and increasing the need for irrigation.

Effects On Farming

Agriculture uses most of the land in the Great Plains. It is important to business there. Climate change could make farming less predictable.

In the northern Plains, crops benefit from increased rain and snow in winter and spring. However, if the fields become too wet, fewer crops can grow. Heavier rainfall would also harm crops and soil quality. Summer rainfall is not expected to go up. This makes drought more dangerous. Meanwhile, higher summer temperatures are likely to lower plant growth. In the central and southern Plains, the higher temperatures and decreased rainfall will increase irrigation demands. Crop growth could be cut in half.

The Great Plains is already experiencing warmer winters. This winter will be even warmer. More bugs and weeds can come. Also, winter crops are in greater danger of damage.

Livestock, like cows and chickens, is a big part of business in the Great Plains. Warmer temperatures harm animals. That means less meat, milk and eggs. Diseases may increase. It also costs more to keep the animals cool.

Livestock need a lot of water. Some of the largest water use in the country occurs in the Great Plains. Texas uses the most water for livestock in the country. As livestock business continues, more water will be needed.

Effects On Plants And Animals

Land is developed for humans to use. But then animals and plants have fewer places to live. Climate change is also increasing harmful insect outbreaks and changing when plants flower. Wildfires are increasing.

Climate change is affecting animals hunted for food. This includes ducks, deer and fish. Many of these animals rely on shallow lakes. The lakes also help recharge the High Plains Aquifer. Agricultural practices have changed most of the large lakes that fill up for part of the year in the southern Great Plains.

III. AFTER READING (RECALL):

SUMMARIZE: Now that you have read and annotated this article, summarize the author's position/message using the following vocabulary:

Great Plains, climate change, ecosystems, Increased, irrigation, agriculture, drought

You can add endings to words as needed.

RELATE: What connections can you make to what you see and know about the world right now? What thoughts or opinions do you have about this topic?

REFLECT on the PURPOSE QUESTION:

Based on your reading so far, what effects of global warming or climate change do you think you have or will experience in your lifetime? Use evidence from your readings to justify your answer.

Passage 3: Humanity will Find Ways to Adapt to Climate Change

I. BEFORE READING (PREVIEW):

1) Scan all of the **text features** of the passage on pages 27-28 (below)
   (Do not read the text yet, just read and look at the **text features**.)
2) Based on the text features, what is the **topic**?

   _____

3) Brainstorm what you know (your **schema**) about this **topic**.
   (What have you watched, read, experienced, heard, about this topic in the past?)

4) Write a prediction about the author's message in this text using all of the words below. If a word is unfamiliar try https://www.wordsmyth.net/ for definition, synonyms, images, and sentences using the word.

adaptations, climate change, destructive, weather, collective-response, political economy, migration

You can add endings to words as needed.

5) **Your purpose question is:** ***How does climate change affect me?***
   (As you read, your purpose will be to identify evidence to answer this question.)

II. NOW IT'S TIME TO READ:

READ & ANNOTATE on the text below using the following key. ***Use all of the annotation marks*** *at least once and explain your thinking about each annotation mark in the margin.*

ANNOTATION KEY:

?	Words, phrases, and sentences that cause confusion. **Write a question about your confusion in the margin.**
○	Important, unfamiliar words (circle)
!	Main/central ideas (What is important to the author's message?)
#	Connections to prior experiences or learning. **Write about your connection in the margin.**

Humanity will Find Ways to Adapt to Climate Change

The Economist, 2019

Image: A movable system, the Thames Barrier on the Thames River in London, England, was made to stop the surrounding areas from being flooded because of high water levels. Photo: Andy Roberts/Wikimedia Commons

Editor's Note: The opinions in this essay are those of the writer and do not necessarily represent the views of Newsela or its editors. Political language, word choice and position belong to the author alone.

Destructive storms are becoming more common because of climate change. After these storms tear through an area, the people affected must make important decisions. Should they put money into developing better drainage? Should they rebuild with stronger design and materials, or should they just move? The weather will certainly get worse in the future. This will mean higher seas, fiercer storms and more rain. People will have to adapt in order to reduce the human and economic costs of the changing

climate. However, any large-scale adaptations will cost money. This spending makes the politics of the issue even more difficult.

Efforts to slow global warming have been met with political difficulties. Tackling climate change will be expensive and bothersome. The benefits of reduced warming may not be seen for centuries. The term "mitigation" refers to efforts to curb emissions.

Carbon Emissions

Carbon emissions are to blame for much of global warming. Some carbon emissions happen naturally. Decomposition is one way. But much is caused by burning fossil fuels such as gas, oil and natural gas. Cutting down forests is another.

Mitigation of emissions has been slowed by how individual and group actions are viewed. Individuals may feel that their own actions do not matter much. Some people think they do not have to make sacrifices because other people are already doing so. For example, a person may decide that driving to work is OK because other people are taking public transportation.

Adaptation, though, can pay off even when a person acts out of pure self-interest. Homeowners spend money on energy-efficient heating in order to benefit from lower gas and electric bills. There are no political problems to untangle. Government actions are only slightly more complicated. They need political agreement to spend public money on environmental projects. However, the people paying for these improvements are often the ones who are benefiting.

All this means that adaptation is likely to play a large role in humanity's response to climate change. Indeed, people already react to extreme weather events. This is clear from the fact that purchases of air-conditioners rise after heat waves. Some individuals may adapt by choosing to take a job in a place with less extreme weather. A few cities are making more obvious adaptations. They are building defenses against floods and sea rise.

Increased Demand

Eventually, there will be an increased demand for ways to ease the pain of climate change. There will be a growing market for goods. This will force producers to come up with new products. The market for better means of coping with climate change is already growing daily.

There are economic reasons to adapt to climate change. Experts predict that floods will negatively affect the economy. They will cause the global GDP — basically the combined amount of money that all the countries in the world make in a year — to drop by 4.5 percent by 2200. However, if people adapt properly, the loss drops to just 0.11 percent.

One suggestion for adaptation is making infrastructure climate-proof. Infrastructure includes roads, ports, electricity, sanitation, sewer and communications systems. Protecting water resources is another way of adapting. Improving water use in irrigating farmland in dry areas is yet another.

Still, adaptation has its drawbacks. Investments in adaptation will soften the effects of climate change. However, they could also reduce the desire for spending on mitigation. Laws to reduce carbon emissions will result in cost and inconvenience for nearly everyone. Many people may dislike these laws. Investments in adaptation will reduce the likelihood or severity of future environmental dangers. At the same time, however, they may undercut the case for accepting the hardship of decarbonization. The longer governments fail to act to curb warming, the more people and companies will spend to safeguard themselves. This will mean they are less troubled by governments' failures to decarbonize.

Some Areas Cannot Adapt Easily

Even if some people can adapt to a warmer world, it is still a big problem. Some areas cannot adapt as easily as others. North America and mainland Europe both have relatively steady climates. Rich people in these areas have money to spend on adaptation. They can move from the worst-hit spots somewhat easily. Poor people have little spare cash, mostly live in hotter places and face more hardships when they try to migrate.

In mitigation, the steps rich countries take to help themselves also help poorer ones. These poorer nations are less responsible for global warming. They also feel its effects more strongly. Richer countries must realize having the money to shield themselves from the effects of global warming doesn't mean they shouldn't help poor countries. In fact, they should help more.

III. AFTER READING (RECALL):

SUMMARIZE: Now that you have read and annotated this article, summarize the author's position/message using the following vocabulary:

adaptations, climate change, destructive, weather, collective-response, political economy, migration

You can add endings to words as needed.

RELATE: What connections can you make to what you see and know about the world right now? What thoughts or opinions do you have about this topic?

REFLECT on the PURPOSE QUESTION:

Based on this passage, what are some ways you, your community and Kansas City may adapt to climate change? Use evidence from your reading to justify your thinking.

RAFT WRITING RESPONSE

Directions:

1. Decide which RAFT exercise you want to do. Always read across the chart.
2. Look at the 1st column of ROLES. A role is the person you are pretending to be. This is the voice you will write from. Select a role that interests you.
3. Who is the AUDIENCE you will be writing to? You must write to the AUDIENCE that matches the ROLE you chose.
4. Look at the 3rd column that goes with your ROLE. THe FORMAT is the way you will write to your AUDIENCE.
5. What will you write about? What will a writer in the ROLE you chose, know about the topic in the 4th column? You will use evidence from the 3 texts you read to write about this TOPIC.
5. You have four options, choose one. Write 3 -5 paragraphs based on the row you choose from the chart below.

ROLE (you)	AUDIENCE	FORMAT	TOPIC
Citizen of Kansas	Other Kansans	Newspaper editorial	What can we do in Kansas to make a difference for climate change and adapt to the climate changes already occurring?
Teenager in 2020	Future teenagers	Journal entry	What did your parents and grandparents do with the environment that you think your generation needs to do differently?
Parent / grandparent	children/ grandchildren	Letter	What does the parent/grandparent regret about what their generation did? What would you recommend that future generations do?
Farmer	Book publisher	Proposal	Convince the publisher of a book idea about a farmer's life during climate change. What do farmers have to deal with and how will they adapt.

English Language Arts/Literacy

Grade:

May 4 - May 15, 2020

Passage 1: Human Rights: Questions and Answers

I. BEFORE READING (PREVIEW):

1) Scan all of the **text features** of the passage on pages 34-36 (below)
(Do not read the text yet, just read and look at the **text features**.)

What are text features? Titles, subtitles, pictures, graphs, bold-faced words, anything the author does to help you understand the text.

2) Based on the text features, what is the **topic**?

_____

3) Brainstorm what you know (your **schema**) about this **topic**.
(What have you watched, read, experienced, heard, about this topic in the past?)

4) Write a prediction about the author's message in this text using all of the words below. If a word is unfamiliar try https://www.wordsmyth.net/ for definition, synonyms, images, and sentences using the word.

human rights, civil rights, violations, enforced, laws of war, civilians, jurisdiction, court

You can add endings to words as needed.

5) **Your purpose question is:** ***How are your human rights protected?***
(As you read, your purpose will be to identify evidence to answer this question.)

II. NOW IT'S TIME TO READ:

READ & ANNOTATE on the text below using the following key. ***Use all of the annotation marks*** *at least once and explain your thinking about each annotation mark in the margin.*

ANNOTATION KEY:

?	Words, phrases, and sentences that cause confusion. **Write a question about your confusion in the margin.**
○	Important, unfamiliar words (circle)
!	Main/central ideas (What is important to the author's message?)
#	Connections to prior experiences or learning. **Write about your connection in the margin.**

Human Rights: Questions and Answers

https://newsela.com/read/lib-human-rights/id/27599/

A photo taken in 1993 of a trilingual (Tibetan-Chinese-English) police notice placed above the entrance to a small cafe in Nyalam, Tibet. China took over Tibet in 1950, and Tibetan monks have protested for their independence many times since. Human rights organizations have been critical of China's approach to human rights in Tibet. Photo by: John Hill, Wikimedia Commons.

When people talk about human rights, what do they really mean?

What are human rights?

Human rights are rules that say how governments must treat people. They are the rights and freedoms that all people have because they are human.

Human rights come from different cultures, religions and ideas around the world. They protect everyone equally. Human rights do not depend on a person's race, sex, religion or political ideas.

How are human rights different from civil rights?
Faraz Sanei works at Human Rights Watch. This is a group that fights for human rights around the world. Sanei believes that crimes are usually not human rights violations. If a person kills someone, that's a crime. It's not necessarily a human rights violation. But it may be a different case if that person continues to kill people, or if a group of people kills people. If the country does not put them on trial, then the country could be breaking humans rights law.

How are human rights defined?
The United Nations (U.N.) is a group of countries that work together to promote cooperation. In 1948, the U.N. passed the Universal Declaration of Human Rights. It said that all people have human rights and that all nations must respect them. Since then, countries have signed many other human rights agreements.

The core human rights treaties include:
The International Covenant on Civil and Political Rights: Civil and political rights mostly protect individuals from the government. They include rights to life, liberty and a fair trial. They also include freedom of speech, freedom of religion and the right to protest peacefully.

The International Covenant on Economic, Social and Cultural Rights: Economic, social and cultural rights include rights to housing, education and health care.

Other treaties try to stop certain crimes, such as torture and slavery. Some treaties protect the rights of particular groups. There are treaties to protect people of color, women, children and people with disabilities.

International groups make sure governments follow human rights treaties.

How are human rights enforced?
Governments are in charge of protecting human rights. They have to make sure officials respect human rights. If officials don't, governments must punish them. Governments must also create ways for people to get help. For example, governments must have courts that treat everyone fairly. A country must also punish its citizens who break human rights laws.

Sometimes governments break human rights laws. When that happens, victims must get help from outside groups. Some groups help victims by fighting for them in court. Others put pressure on governments to change their laws.

What about human rights in armed conflict?
Laws of war are different from human rights. Human rights law applies at all times, but the laws of war only apply during wartime. The laws of war do not stop war. Instead, they tell countries how to protect people who are not soldiers and how to treat prisoners fairly. Rules for fighting wars have existed for thousands of years. But global treaties only go back about 150 years. The Geneva Conventions and the Land Mines Treaty are two of the best known treaties. The Geneva Conventions say how prisoners of war must be treated. The Land Mines Treaty says that countries cannot use of landmines, or bombs that go off when someone steps on them.

What about prosecutions of rights violators?

A country may put anyone on trial for breaking human rights laws. The person on trial does not have to live in the country, and the crime can take place anywhere in the world. This is allowed because of something called "universal jurisdiction."

There are also international courts that hear human rights cases. The International Criminal Court was set up in 2002. It puts people on trial for very serious crimes, such as genocide and war crimes.

How do human rights evolve?
Human rights grow and change over time. This happens as new groups begin to push for their rights. About 15 years ago, lesbian, gay, bisexual and transgender (LGBT) people began to fight for their human rights.

III. AFTER READING (RECALL):

SUMMARIZE: Now that you have read and annotated this article, summarize the author's position/message using the following vocabulary:

human rights, civil rights, violations, enforced, laws of war, civilians, jurisdiction, court

You can add endings to words as needed.

RELATE: What connections can you make to what you see and know about the world right now? What thoughts or opinions do you have about this topic?

REFLECT on the PURPOSE QUESTION:

Based on your reading so far, **how do you think** your human rights are protected in the United States? Use the text evidence to explain what rights you know are protected and **how you think** they are protected.

Passage 2: Universal Declaration of Human Rights

I. BEFORE READING (PREVIEW):

1) Scan all of the **text features** of the passage on pages 39-42 (below)
   (Do not read the text yet, just read and look at the **text features**.)
2) Based on the text features, what is the **topic**?

   _____

3) Brainstorm what you know (your **schema**) about this **topic**.
   (What have you watched, read, experienced, hear, about this topic in the past?)

4) Write a prediction about the author's message in this text using all of the words below. If a word is unfamiliar try https://www.wordsmyth.net/ for definition, synonyms, images, and sentences using the word.

Hatred, fundamental rights, oppression, tyranny, declaration, liberty, equally, discimination

You can add endings to words as needed.

5) **Your purpose question is:** ***How are your human rights protected?***
   (As you read, your purpose will be to identify evidence to answer this question.)

II. NOW IT'S TIME TO READ:

READ & ANNOTATE on the text below using the following key. ***Use all of the annotation marks*** *at least once and explain your thinking about each annotation mark in the margin.*

ANNOTATION KEY:

?	Words, phrases, and sentences that cause confusion. **Write a question about your confusion in the margin.**
○	Important, unfamiliar words
!	Main/central ideas (What is important to the author's message?)
#	Connections to prior experiences or learning. **Write about your connection in the margin.**

Universal Declaration of Human Rights

Former first lady Eleanor Roosevelt holds the United Nations Universal Declaration of Human Rights, this copy written in Spanish, in November 1949. President Harry Truman had appointed Roosevelt as a representative to the young United Nations organization. She chaired the U.N. Human Rights Commission that wrote the Universal Declaration of Human Rights

Introduction: Editor's Note: The Universal Declaration of Human Rights was approved by the United Nations on December 10, 1948, in Paris, France. It was written soon after World War II. The actions by Nazi Germany during the Holocaust shocked the world. The Holocaust pushed countries to come up with ways to protect people's rights. The Universal Declaration is not law. It is just a statement. But it led other countries to pass laws to protect people.

This Declaration says human rights are given to all people. It includes the right to life, liberty, free speech, religion, privacy, health and education.

Preamble

All members of the human family have basic rights. These rights can bring freedom, justice and peace to the world.

Hatred of human rights has resulted in horrible acts. They have shocked the world. Now, all human beings want to be sure they can enjoy freedom of speech and religion. They don't want to be afraid. They want the things that lead to a better life.

Laws are needed to protect human rights.

The peoples of the United Nations want human rights. They also want equal rights for men and women.

This is the Universal Declaration of Human Rights. It is for all peoples and all nations. It teaches respect for these rights.

Article 1 All human beings are born free and equal. They should act fairly. There should be a feeling of brotherhood everywhere.

Article 2 People of every race, color, sex, language and religion shall have human rights.

Article 3 Everyone has the right to life, liberty and safety.

Article 4 No one can be made to be a slave. The slave trade is against the law.

Article 5 No one shall be tortured.

Article 6 Everyone is protected equally by laws. You have rights no matter where you go.

Article 7 All people shall have the protections in a court of law.

Article 8 We can all ask for the law and courts to help us when we are not treated fairly.

Article 9 No one shall be arrested without a reason.

Article 10 Everyone has a right to be heard by judges in a court of law.

Article 11 Everyone charged with a crime will have a lawyer. People are innocent until proven guilty.

Article 12 Everyone has the right to privacy. No one can just go into a person's house. No one can open someone's mail or spy on someone. The government can only invade someone's privacy if it has a very good reason. These rights protect a person's reputation, too.

Article 13 (1) Everyone has the right to move freely around their country.

(2) Everyone has the right to leave and return to his country.

Article 14 If someone is mistreated in their own country, they can flee to another country. They will be given safety in the new country and can stay there.

Article 15 We all have the right to belong to a country. A citizen can leave their country and become a citizen of another country.

Article 16 Men and women of all races and religions can marry and choose to have families. They have equal rights to marry and divorce.

Article 17 (1) Everyone has the right to own property, like a home and land.

(2) No one shall have their property taken from them.

Article 18 Everyone has the right to believe in what they want. Everyone has the right to choose a religion to believe in.

Article 19 All people have the right to say what they think. They can also share what they think in newspapers, in books and in other types of media.

Article 20 (1) All people have the right to meet anyone in public. People can meet in groups to work together peacefully to defend their rights.

(2) No one may be forced to join a group.

Article 21 (1) Everyone has the right to take part in their government. Men and women have the right to vote to choose their leaders. How people vote must be kept secret.

Article 22 We all have the right to a home, to have enough money to live on when we get older and to get medical help if we are sick.

Article 23 (1) Everyone has the right to work in a safe place. People should also have help if they lose their job.

(2) Everyone has the right to the same pay if they do the same work.

(3) Workers should get paid fairly.

(4) Everyone has the right to join a union. Unions help workers have safe jobs and protections at work.

Article 24 Everyone has the right to rest and have time away from work. There should be limits on the number of hours of work. Workers should get holidays with pay each year.

Article 25 (1) Everyone has the right to a life with good health for himself and his family. This includes having a doctor, food, clothing, and a place to live. There should also be help in case of sickness or if he loses his job.

(2) Motherhood and childhood need special care. All children, whether born to one or two parents, shall be cared for.

Article 26 (1) Everyone has the right to education. There must be free elementary education for all. A college education shall be offered equally for those that study well.

(2) Education should teach respect for human rights. That leads to understanding and friendship among all nations, races and religions. It helps the United Nations keep peace in the world.

(3) Parents have rights to choose the kind of education for their children.

Article 27 (1) Everyone has the right to enjoy art and music, inventions and books.

(2) Everyone has the right to be paid for art, inventions or books they have created. (Copyright.)

Article 28 Everyone is free to live in a safe, peaceful country to enjoy their human rights.

Article 29 We have a responsibility to other people, and we should protect their rights and freedoms.

Article 30 Nobody can take away these rights and freedoms.

III. AFTER READING (RECALL):

SUMMARIZE: Now that you have read and annotated this article, summarize the author's position/message using the following vocabulary:

Hatred, fundamental rights, oppression, tyranny, declaration, liberty, equally, discimination

You can add endings to words as needed.

RELATE: What connections can you make to what you see and know about the world right now? What thoughts or opinions do you have about this topic?

REFLECT on the PURPOSE QUESTION:

After reading the articles of the Universal Declaration of Human Rights, what do you believe is one area of human rights that the United States struggles with? Use evidence from your reading and your own experiences to explain your reasoning.

Passage 3: Understanding the Rights of Children

I. BEFORE READING (PREVIEW):

1) Scan all of the **text features** of the passage on pages 45-47 (below)
   (Do not read the text yet, just read and look at the **text features**.)
2) Based on the text features, what is the **topic**?

   _____

3) Brainstorm what you know (your **schema**) about this **topic**.
   (What have you watched, read, experienced, heard, about this topic in the past?)

4) Write a prediction about the author's message in this text using all of the words below. If a word is unfamiliar try https://www.wordsmyth.net/ for definition, synonyms, images, and sentences using the word.

Treaty, protect, children, exploit, violence, pledge, obligation, enforce

You can add endings to words as needed.

5) **Your purpose question is:** ***How are your human rights protected?***
   (As you read, your purpose will be to identify evidence to answer this question.)

II. NOW IT'S TIME TO READ:

READ & ANNOTATE on the text below using the following key. ***Use all of the annotation marks*** *at least once and explain your thinking about each annotation mark in the margin.*

ANNOTATION KEY:

?	Words, phrases, and sentences that cause confusion. **Write a question about your confusion in the margin.**
○	Important, unfamiliar words (circle)
!	Main/central ideas (What is important to the author's message?)
#	Connections to prior experiences or learning. **Write about your connection in the margin.**

Opinion: Understanding the Rights of Children

By Human Rights Watch

Children sit in a school in Bamozai, Afghanistan. The school has no building. Classes are held outdoors in the shade of an orchard. Photo by: Captain John Severns/Wikimedia

The Convention on the Rights of the Child is a global treaty. It was created by the United Nations, or U.N., in 1989. The U.N. is a group of countries that work together to promote international cooperation.

The treaty establishes global rules to make sure that children are protected. Countries that sign the treaty make a promise to protect children from mistreatment. They also promise to improve children's education, health care, and quality of life.

How many countries have ratified the convention?
The Convention on the Rights of the Child is the most widely approved human rights treaty in history. It has been signed by 194 countries. The only ones that have not signed the treaty are the United States and the African countries of Somalia and South Sudan.

How has the convention improved the lives of children?
Many countries have used the treaty to strengthen their laws. Children are now better off in many ways than they were 25 years ago. For example, children's healthcare has improved.

Children today are also much more likely to attend school. In 1990, only about 5 out of 10 children in the least developed countries attended school. Today, about 8 out of 10 attend school. Children are also prevented from working if they are too young.

Physically punishing children is no longer allowed in 42 countries. Before 1989, this was only true in four countries.

How are governments failing to implement the convention?
Many children have been left out of the progress of the last 25 years. This is because some countries do not follow their own laws for protecting children.

At least 58 million children today are not in school. Many children suffer and die from diseases that can be easily prevented. About 168 million children are involved in child labor, meaning that they work at a young age. Every year an estimated 14 million girls around the world are married before they turn 18.

At least one million children are kept in prison each day. Most kids also live in countries where it is still legal to punish children physically.

How is the convention enforced?
Countries that sign the treaty must send reports every five years to a U.N. committee. The committee is a group of experts who examine the reports. They find out what countries are doing well and what they need to do better. The committee then recommends ways to improve the lives of children.

Why hasn't the United States signed the treaty?
The United States is the only country that does not plan to sign the treaty. The reason is that some U.S. government officials and groups are opposed to it. Some claim that there is no need to sign the treaty. U.S. laws already follow most of its rules, they argue.

However, U.S. laws fail to follow the treaty in important ways. For example, the U.S. allows courts to send people to prison for life. This can happen even if they carried out a crime before they were 18. They may never be able to leave prison, even if they change and behave well.

Labor laws sometimes allow children as young as 12 to be put to work on farms. These practices would not be allowed if the U.S. signed the treaty.

What should governments do to better fulfill the rights of children?
The rights of millions of children are still violated every day. Governments should take several key steps to protect children.

First, they should review national laws. They should make sure that these laws follow the treaty. For example, governments should make sure that child labor and child marriage are not allowed. They should also make sure that it is against the law to hurt and take advantage of children. Governments should make sure that people who hurt children are punished.

Governments should help more children attend school and improve children's health. They should identify children who are not given schooling, health and other services. In many cases, these are girls, children with disabilities or non-white children. Governments should make plans and rules to help them. They should also end practices that are shown to be ineffective and damaging to children.

III. AFTER READING (RECALL):

SUMMARIZE: Now that you have read and annotated this article, summarize the author's position/message using the following vocabulary:

Treaty, protect, children, exploit, violence, pledge, obligation, enforce

You can add endings to words as needed.

RELATE: What connections can you make to what you see and know about the world right now? What thoughts or opinions do you have about this topic?

REFLECT on the PURPOSE QUESTION:

Based on your experience as a human and a child, what rights are you grateful for? Which rights do you think are not being fully protected in the world? Use evidence from the texts and your own research or experience to defend your thinking.

RAFT WRITING RESPONSE

Directions:

1. Decide which RAFT exercise you want to do. Always read across the chart.
2. Look at the 1st column of ROLES. A role is the person you are pretending to be. This is the voice you will write from. Select a role that interests you.
3. Who is the AUDIENCE you will be writing to? You must write to the AUDIENCE that matches the ROLE you chose.
4. Look at the 3rd column that goes with your ROLE. THe FORMAT is the way you will write to your AUDIENCE.
5. What will you write about? What will a writer in the ROLE you chose, know about the topic in the 4th column? You will use evidence from the 3 texts you read to write about this TOPIC.
5. You have three choices, choose one or make up on RAFT of your own to put in the last row. Write 3 -5 paragraphs based on the row you choose from the chart below.

ROLE (you)	AUDIENCE	FORMAT	TOPIC
A KCKPS student	Congress	Speech	Convince the members of our government to ratify this treaty on children's rights. Identify the reasons the US should be a part of this treaty.
Children's rights activist	United Nations	Letter	Explain the importance of education for the children of the world and why they should take a more active role in protecting education for all children no matter race, religion, or gender.
Refugee mother in US from Syria	Blog for Refugees	Blog post	Explain the importance of children's rights and how you think they are and are not being protected here in the United States.
You Choose:	You choose:	You Choose:	You Choose:

REVIEW: Rounding Whole Numbers

Name _____

Key Concept and Vocabulary

round up

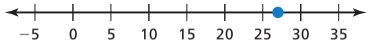
Decision digit is 5, 6, 7, 8, or 9.

round down

Decision digit is 0, 1, 2, 3, or 4.

Visual Model

To round to the *nearest ten*, choose the closest multiple of ten.



27 is closer to 30 than to 20. So, 27 rounds to 30.

Skill Examples

1. To the *nearest ten:* 113 rounds to 110.
2. To the *nearest hundred:* 182 rounds to 200.
3. To the *nearest thousand:* 4506 rounds to 5000.

Application Example

4. An appraiser adds the areas of the rooms in a house and gets 1548 square feet. Estimate this to the nearest ten square feet.

   To the *nearest ten:* 1548 rounds to 1550.

   ∴ The house has about 1550 square feet.

PRACTICE MAKES *PURR*-FECT™

Check your answers at BigIdeasMath.com.

Round to the nearest ten. (The symbol ≈ means "is approximately equal to.")

5. 57 ≈ _____
6. 142 ≈ _____
7. 345 ≈ _____
8. 189 ≈ _____

Round to the nearest hundred.

9. 57 ≈ _____
10. 142 ≈ _____
11. 345 ≈ _____
12. 189 ≈ _____

Round to the nearest thousand.

13. 23,450 ≈ _____
14. 3623 ≈ _____
15. 872 ≈ _____
16. 45,214 ≈ _____

Round the area of the figure to the nearest ten.

17.

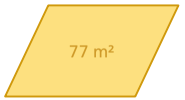
Area ≈ _____

18.

Area ≈ _____

19.

Area ≈ _____

20. 

Area ≈ _____

21. **NATIONAL DEBT** In February of 2009, the national debt for the United States was $10,770,358,064,879. Round this debt to the nearest billion dollars. _____

22. **POPULATION OF TEXAS** To the nearest thousand, the population of Texas was estimated to be 24,327,000 in 2008. Describe the actual population that Texas could have had in 2008.

_____

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REVIEW: Adding and Subtracting Whole Numbers

Name _____

Key Concept and Vocabulary

sum

$8 + 5 = 13$

terms

difference

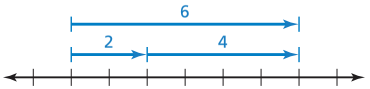
$16 - 6 = 10$

terms

Visual Model

To add on a number line, move to the *right*.

$2 + 4 = 6$



To subtract on a number line, move to the *left*.

Skill Examples

1. $12 + 17 = 29$
2. $23 + 0 = 23$
3. $114 + 5 + 18 = 137$
4. $9 - 4 = 5$
5. $16 - 0 = 16$
6. $139 - 39 = 100$

Application Example

7. You spent $3 for socks, $28 for gym shoes, $18 for a T-shirt, and $15 for shorts. How much did you spend for your gym outfit?

   $3 + 28 + 18 + 15 = 64$

   ∴ You spent $64.

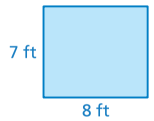
PRACTICE MAKES *PURR*-FECT™

Check your answers at BigIdeasMath.com.

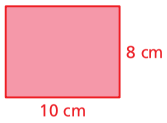
Find the sum or difference.

8. $21 + 7 =$ _____
9. $94 + 0 =$ _____
10. $104 + 142 =$ _____
11. $1147 + 234 =$ _____
12. $19 - 18 =$ _____
13. $39 - 29 =$ _____
14. $72 - 49 =$ _____
15. $1035 - 246 =$ _____
16. $941 - 0 =$ _____
17. $12 + 5 + 8 =$ _____
18. $31 + 1 + 1 =$ _____
19. $123 + 41 + 18 =$ _____

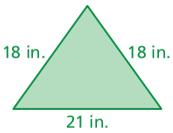
Find the perimeter of the rectangle or triangle.

20. 

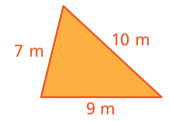
Perimeter = _____

21. 

Perimeter = _____

22. 

Perimeter = _____

23. 

Perimeter = _____

24. **RUNNING** You ran 2 miles on Monday, 2 miles on Tuesday, 3 miles on Wednesday, 2 miles on Thursday, and 4 miles on Friday. How many miles did you run during the week? _____

25. **PLANNING A SHOPPING TRIP** You have $27 and take another $32 from your savings account. How much will you have left after buying a shirt for $18 and a pair of jeans for $29. Explain.

_____

_____

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REVIEW: Multiplying Whole Numbers

Name _____

Key Concept and Vocabulary

factors • product

$3 \cdot 4 = 12$

Visual Model

A rectangle that is 3 units by 4 units has an area of 12 square units.

Area $= 3 \times 4$

$= 12$ square units

Skill Examples

1. $6 \cdot 7 = 42$
2. $0 \times 5 = 0$
3. $8 \cdot 1 = 8$
4. $(9)(12) = 108$
5. $15 \times 20 = 300$

Application Example

6. Find the area of a rectangular lot that is 20 yards wide and 35 yards long.

Area = (length)(width)

$= 35 \cdot 20$

$= 700 \text{ yd}^2$

∴ The area is 700 square yards.

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Check your answers at BigIdeasMath.com.

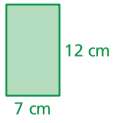
Find the product.

7. $8 \cdot 12 =$ _____
8. $15 \times 12 =$ _____
9. $(13)(20) =$ _____
10. $2 \cdot 240 =$ _____
11. $13 \times 6 =$ _____
12. $(11)(8) =$ _____
13. $19 \cdot 21 =$ _____
14. $30 \times 100 =$ _____
15. $0 \cdot 114 =$ _____
16. $26 \times 1 =$ _____
17. $4 \cdot 10 \cdot 8 =$ _____
18. $9 \cdot 14 \cdot 2 =$ _____

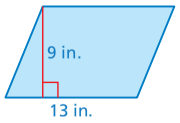
Find the area of the rectangle or parallelogram.

19.

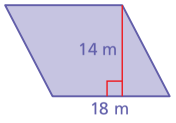
Area = _____

20. 

Area = _____

21. 

Area = _____

22. 

Area = _____

23. **SCHOOL BUS** Each school bus can carry a maximum of 50 passengers. What is the maximum number of passengers that 12 school buses can carry? _____

24. **PAPER CUPS** Each package contains 65 paper cups. You buy four packages. Do you have enough paper cups for 250 people to each have one? How do you know?

_____

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REVIEW: Dividing Whole Numbers

Name _____

Key Concept and Vocabulary

dividend • quotient

$10 \div 2 = 5$

divisor

Visual Model

If you divide 6 units into 3 equal parts, each part will have 2 units.

$6 \div 3 = 2$

Skill Examples

1. $42 \div 6 = 7$
2. $\frac{65}{13} = 65 \div 13 = 5$
3. $\begin{array}{r} 13 \\ 15\overline{)195} \\ \underline{15} \\ 45 \\ \underline{45} \\ 0 \end{array}$ ∴ $195 \div 15 = 13$

Application Example

4. Six people find a treasure worth $12,300. If each person receives an equal share, how much does each person get?

$\$12{,}300 \div 6 = \$2050$

∴ Each person gets $2050.

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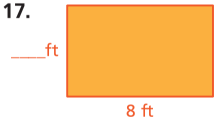
Check your answers at BigIdeasMath.com.

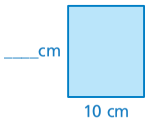
Find the quotient.

5. $56 \div 8 =$ _____
6. $99 \div 11 =$ _____
7. $132 \div 6 =$ _____
8. $80 \div 5 =$ _____
9. $\frac{88}{4} =$ _____
10. $\frac{156}{3} =$ _____
11. $\frac{430}{86} =$ _____
12. $\frac{3082}{23} =$ _____
13. $18\overline{)216}$
14. $12\overline{)960}$
15. $9\overline{)567}$
16. $19\overline{)323}$

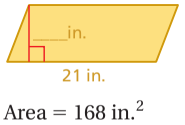
Find the height of the rectangle or parallelogram.

17. 

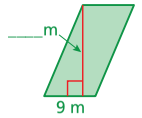
Area = 40 ft²

18. 

Area = 120 cm²

19. 

Area = 168 in.²

20. 

Area = 144 m²

21. **PARTY PUNCH** A punch bowl contains 6 quarts of punch. There are 32 fluid ounces in a quart. How many 4-fluid ounce cups will the punch bowl serve? _____

22. **SHARING THE PROFIT** You and three friends start a small business. Your total income is $820 and your total expenses are $360. You share the profit evenly. How much do each of you get? Explain. _____

_____

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REVIEW: Writing Whole Number Expressions

Name _____

Key Concept and Vocabulary

Operation	Words	Algebra
Addition	the *sum* of	$a + b$
Subtraction	the *difference* of	$a - b$
Multiplication	the *product* of	$a \times b$ $a \cdot b$
Division	the *quotient* of	$a \div b$ $\frac{a}{b}$ $b\overline{)a}$

The four basic operations are addition, subtraction, multiplication, and division.

Application Examples

1. A restaurant orders six gallons of orange juice each week. Each gallon contains four quarts. Write an expression to find the total number of quarts of orange juice the restaurant orders each week.

   You want to find the total number of quarts in six groups of four quarts. The phrase *six groups of four* indicates you need to find the product.

   An expression is 6×4.

2. A 20-fluid-ounce sports drink contain 240 calories. Write an expression to find the number of calories in each fluid ounce.

   You want to find the number of calories per fluid ounce. The phrase *calories per fluid ounce* indicates you need to find the quotient.

   An expression is $240 \div 20$.

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Check your answers at BigIdeasMath.com.

3. **TEST** The score from your first math test is 82. The score from your second math test is 95. Write an expression to find the increase from the first test to the second test. _____

4. **LAWN** Each weekend you earn $40 doing lawn work for your neighbor. Write an expression to find how much you will earn in 6 weeks. _____

5. **FOOD DRIVE** You donate 12 cans of food and 4 boxes of macaroni to a food drive. Write an expression to find the number of items you donate. _____

6. **BOWLING** You are taking reservations for a bowling party with 35 guest. Each bowling lane can hold 5 bowlers. Write an expressions to find the number of lanes the party will need. _____

7. **SHOPPING** You plan to buy a shirt for $24 and a hat for $18. You have $57. Write an expression to find how much you will have left over. _____

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REVIEW: Factors of Whole Numbers

Name _____

Key Concept and Vocabulary

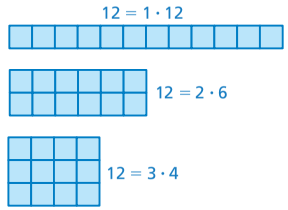
Factors of 12: 1, 2, 3, 4, 6, 12

Factors of 18: 1, 2, 3, 6, 9, 18

Greatest Common Factor

Visual Model

There are 3 ways to factor 12 into 2 whole numbers. Each way is represented by a rectangle.



Skill Examples

1. Factors of 1: 1
2. Factors of 8: 1, 2, 4, 8
3. Factors of 7: 1, 7
4. Factors of 30: 1, 2, 3, 5, 6, 10, 15, 30
5. Factors of 33: 1, 3, 11, 33

Application Example

6. What is the greatest number of people with whom 20 pennies and 24 dimes can be shared so that each person gets the same share?

   The greatest common factor (GCF) of 20 and 24 is 4.

   The greatest number is 4 people.

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Check your answers at BigIdeasMath.com.

List all factors of both numbers. Then circle the greatest common factor.

7. Factors of 6: _____
   Factors of 9: _____
8. Factors of 8: _____
   Factors of 16: _____
9. Factors of 20: _____
   Factors of 30: _____
10. Factors of 75: _____
    Factors of 100: _____
11. Factors of 34: _____
    Factors of 51: _____
12. Factors of 10: _____
    Factors of 18: _____
13. Sketch all possible ways that 16 small squares can be arranged to form a rectangle.

14. **SHARING COINS** What is the greatest number of people with whom 30 nickels and 36 dimes can be shared so that each person gets the same share? _____
15. **DECK OF CARDS** A deck of cards has 52 cards. The deck can be divided into 4 piles of exactly 13 cards each. Describe all the other ways the deck can be divided into equal piles.

_____

_____

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REVIEW: Divisibility Tests

Name _____

Key Concept and Vocabulary

A whole number is divisible by
- 2: if its last digit is 0, 2, 4, 6, or 8.
- 3: if the sum of the digits is divisible by 3.
- 4: if the number formed by the last two digits is divisible by 4.
- 5: if its last digit is 0 or 5.
- 6: if it is divisible by 2 and by 3.
- 9: if the sum of its digits is divisible by 9.

Skill Examples

1. 147 is divisible by 3 because $1 + 4 + 7 = 12$ is divisible by 3.
2. 524 is divisible by 4 because 24 is divisible by 4.
3. 243 is divisible by 9 because $2 + 4 + 3 = 9$ is divisible by 9.

Application Example

4. There are 9 students in your class. Can you divide 839 stamps evenly, so that each student in your class gets the same number of stamps?

   The sum of the digits of 839 is $8 + 3 + 9 = 20$. 20 is not divisible by 9.

   ∴ No, you cannot divide the stamps evenly.

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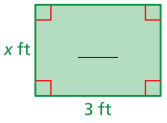
Check your answers at BigIdeasMath.com.

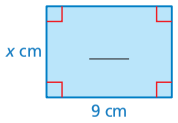
Use a divisibility test to answer the question.

5. Is 146 divisible by 2? _____
6. Is 153 divisible by 3? _____
7. Is 378 divisible by 4? _____
8. Is 1255 divisible by 5? _____
9. Is 147 divisible by 6? _____
10. Is 333 divisible by 6? _____
11. Is 2769 divisible by 3? _____
12. Is 5034 divisible by 3? _____
13. Is 145 divisible by 15? _____

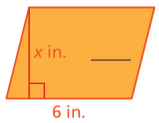
Decide whether x is a whole number. (Figures are not drawn to scale.)

14. 

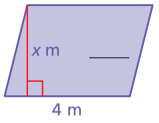
Area = 87 ft^2

15. 

Area = 343 cm^2

16. 

Area = 256 in.^{2}

17. 

Area = 144 m^2

18. **SHARING TIME** There are 360 minutes of monthly cell phone minutes for 4 people in a family. Can each person get the same number of minutes per month? If so, how many?

_____

19. **CALENDAR** Assume that there are 365 days in a year. Describe the possible number of days in a week so that there is an exact number of weeks in a year. *(Hint: 7 is not one of them.)*

_____

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REVIEW: Prime and Composite Numbers

Name _____

Key Concept and Vocabulary

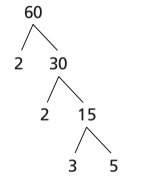
A **prime number** has only 1 and itself as factors. The first 5 prime numbers are 2, 3, 5, 7, and 11.

$24 = 2 \cdot 2 \cdot 2 \cdot 3$

composite | prime factorization

Visual Model

You can use a **factor tree** to find the prime factorization of a composite number.



$60 = 2 \cdot 2 \cdot 3 \cdot 5$

Skill Examples

Prime Factorization

1. $30 = 2 \cdot 3 \cdot 5$
2. $42 = 2 \cdot 3 \cdot 7$
3. $81 = 3 \cdot 3 \cdot 3 \cdot 3$
4. $91 = 7 \cdot 13$
5. $89 = 89$ (Prime)

Application Example

6. You get a paycheck every 2 weeks. Your annual salary is $30,000. Can you get the same amount for each paycheck?

   $30{,}000 = 2 \cdot 2 \cdot 2 \cdot 2 \cdot 3 \cdot 5 \cdot 5 \cdot 5 \cdot 5$

   ∴ 30,000 is not divisible by 13, so you cannot have 26 paychecks of equal size.

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Check your answers at BigIdeasMath.com.

Write the prime factorization of the number.

7. 45 = _____
8. 100 = _____
9. 63 = _____
10. 256 = _____
11. 54 = _____
12. 55 = _____
13. 121 = _____
14. 98 = _____
15. 113 = _____

16. Use a factor tree to find the prime factorization of 36.

17. **EQUAL PAYCHECKS** You get a paycheck every 2 weeks. Your annual salary is $39,000. Can you get the same amount for each paycheck? Explain why or why not.

_____

_____

18. **LISTING PRIME NUMBERS** List all the prime numbers that are less than 50.

_____

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REVIEW: Multiples of Whole Numbers

Name _____

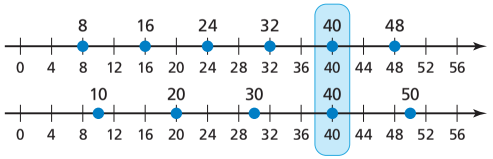
Key Concept and Vocabulary

Multiples of 8:
8, 16, 24, 32, (40), 48, . . .

Multiples of 10:
10, 20, 30, (40), 50, . . .

least common multiple

Visual Model



Skill Examples

1. The LCM of 4 and 6 is **12**.
2. The LCM of 1 and 3 is **3**.
3. The LCM of 3 and 5 is **15**. ← The LCM of two primes is their product.
4. The LCM of 12 and 40 is **120**.
5. The LCM of 11 and 33 is **33**.

Application Example

6. Find the minimum number of 6-taco packages that will serve 4 people with no tacos left over.

The LCM of 4 and 6 is **12**.

For 1 package, there will be 6 tacos and 2 will be left over. For 2 packages, there will be **12 tacos**. Each person gets 3.

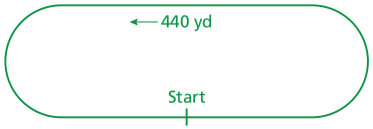
PRACTICE MAKES *PURR*-FECT™

Check your answers at BigIdeasMath.com.

Find the least common multiple of the two whole numbers.

7. 3 and 7: _____
8. 3 and 6: _____
9. 6 and 9: _____
10. 9 and 12: _____
11. 6 and 21: _____
12. 24 and 30: _____
13. 24 and 32: _____
14. 15 and 40: _____
15. 48 and 128: _____

16. **RUNNING** One trip around a track is 440 yards. One runner can complete one lap in 8 minutes. Another can complete a lap in 6 minutes. How long will it take for both to arrive at the starting point together if they start at the same place? _____



17. **BUYING TACOS** Find the minimum number of 5-taco packages that will serve 4 people with no tacos left over. How many will each person get?

_____

18. **HOW MANY PENNIES?** With the same collection of pennies, you can make stacks that have 3 pennies, 4 pennies, or 9 pennies with none left over. How many pennies do you have?

_____

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REVIEW: Least Common Multiple

Name _____

Key Concept and Vocabulary

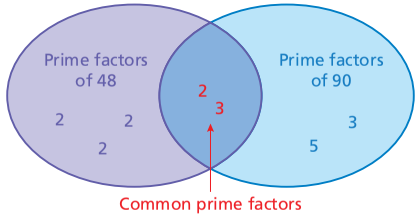
The **least common multiple (LCM)** of two or more positive monomials is the product of their factors, using each common prime factor only once.

Prime factorization:

$30 = 2 \cdot 3 \cdot 5$
$42 = 2 \cdot 3 \cdot 7$

The LCM of 30 and 42 is
$2 \cdot 3 \cdot 5 \cdot 7 = 210$.

Visual Model



$\text{LCM} = 2 \cdot 2 \cdot 2 \cdot 2 \cdot 3 \cdot 3 \cdot 5 = 720$

Skill Examples

1. $15 = 3 \cdot 5$
   $30 = 2 \cdot 3 \cdot 5$
   $\text{LCM} = 2 \cdot 3 \cdot 5 = 30$
2. $20 = 2 \cdot 2 \cdot 5$
   $28 = 2 \cdot 2 \cdot 7$
   $\text{LCM} = 2 \cdot 2 \cdot 5 \cdot 7 = 140$
3. $48 = 2 \cdot 2 \cdot 2 \cdot 2 \cdot 3$
   $90 = 2 \cdot 3 \cdot 3 \cdot 5$
   $\text{LCM} = 2 \cdot 2 \cdot 2 \cdot 2 \cdot 3 \cdot 3 \cdot 5 = 720$
4. $18x^3 = 2 \cdot 3 \cdot 3 \cdot x \cdot x \cdot x$
   $21x^2 = 3 \cdot 7 \cdot x \cdot x$
   $\text{LCM} = 2 \cdot 3 \cdot 3 \cdot 7 \cdot x \cdot x \cdot x = 126x^3$

Application Example

5. Hot dogs come in packages of 10 and hot dog buns come in packages of 8. What is the least number of packages of each that you need to buy to have the same number of hot dogs and hot dog buns?

$10 = 2 \cdot 5$
$8 = 2 \cdot 2 \cdot 2$
} $\text{LCM} = 2 \cdot 2 \cdot 2 \cdot 5 = 40$

$40 \div 10 = 4$ packages of hot dogs
$40 \div 8 = 5$ packages of hot dog buns

You must buy 4 packages of hot dogs and 5 packages of hot dog buns.

PRACTICE MAKES *PURR*-FECT™

Check your answers at BigIdeasMath.com.

Find the least common multiple.

6. 36 = _____ LCM = _____
   45 = _____
7. 70 = _____ LCM = _____
   98 = _____
8. 42 = _____ LCM = _____
   105 = _____
9. 154 = _____ LCM = _____
   231 = _____
10. $27y$ = _____ LCM = _____
    $54y^3$ = _____
11. $56m^5$ = _____ LCM = _____
    $68m^4$ = _____

12. **BOXES** Boxes that are 12 inches tall are being stacked next to boxes that are 18 inches tall. What is the shortest height at which the two stacks will be the same height? height = _____

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REVIEW: Greatest Common Factor

Name _____

Key Concept and Vocabulary

The **greatest common factor (GCF)** of two or more positive monomials is the product of their common prime factors.

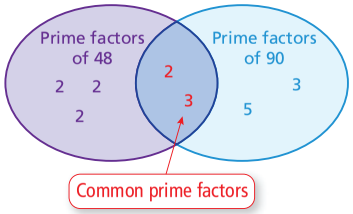
Prime factorization:

$165 = 3 \cdot 5 \cdot 11$

$210 = 2 \cdot 3 \cdot 5 \cdot 7$

The GCF of 165 and 210 is $3 \cdot 5 = 15$.

Visual Model



GCF $= 2 \cdot 3 \cdot 6$

Skill Examples

1. $15 = 3 \cdot 5$
   $30 = 2 \cdot 3 \cdot 5$
   GCF $= 3 \cdot 5 = 15$
2. $20 = 2 \cdot 2 \cdot 5$
   $28 = 2 \cdot 2 \cdot 7$
   GCF $= 2 \cdot 2 = 4$
3. $48 = 2 \cdot 2 \cdot 2 \cdot 2 \cdot 3$
   $90 = 2 \cdot 3 \cdot 3 \cdot 5$
   GCF $= 2 \cdot 3 = 6$
4. $18x^3 = 2 \cdot 3 \cdot 3 \cdot x \cdot x \cdot x$
   $21x^2 = 3 \cdot 7 \cdot x \cdot x$
   GCF $= 3 \cdot x \cdot x = 3x^2$

Application Example

5. You have 48 red flowers, 60 yellow flowers, and 84 white flowers. You want to make flower arrangements that have the same number of each color. What is the greatest number of arrangements that you can make if every flower is used?

$48 = 2 \cdot 2 \cdot 2 \cdot 2 \cdot 3$
$60 = 2 \cdot 2 \cdot 3 \cdot 5$
$84 = 2 \cdot 2 \cdot 3 \cdot 7$
} GCF $= 2 \cdot 2 \cdot 3 = 12$

∴ You can make 12 arrangements.

PRACTICE MAKES *PURR*-FECT™

Check your answers at BigIdeasMath.com.

Find the greatest common factor.

6. $36 =$ _____ GCF = _____
   $45 =$ _____
7. $70 =$ _____ GCF = _____
   $98 =$ _____
8. $42 =$ _____ GCF = _____
   $105 =$ _____
9. $154 =$ _____ GCF = _____
   $231 =$ _____
10. $27y =$ _____ GCF = _____
    $54y^3 =$ _____
11. $56m^5 =$ _____ GCF = _____
    $68m^4 =$ _____
12. **CLOTH** You have two pieces of cloth. One piece is 80 inches wide and the other is 96 inches wide. You want to cut both pieces into strips of equal width that are as wide as possible. How wide should you cut each strip? width = _____

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REVIEW: Commutative and Associative Properties

Name _____

Key Concept and Vocabulary

Commutative Property

$1 + 3 = 3 + 1$ *(Addition)*

$2 + (3 + 5) = (2 + 3) + 5$ *(Addition)*

Associative Property

Commutative Property

$2 \cdot 5 = 5 \cdot 2$ *(Multiplication)*

$2 \cdot (3 \cdot 5) = (2 \cdot 3) \cdot 5$ *(Multiplication)*

Associative Property

Skill Examples

1. $3 + 6 = 6 + 3$
2. $15 + (5 + 3) = (15 + 5) + 3$
3. $4 \cdot 6 = 6 \cdot 4$
4. $2 \cdot (3 \cdot 5) = (2 \cdot 3) \cdot 5$

Application Example

5. Use the above properties and mental math to find the sum: $97 + 28 + 3 + 2$.

$97 + 28 + 3 + 2 = (97 + 3) + (28 + 2)$
$= 100 + 30$
$= 130$

∴ The sum is 130.

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Check your answers at BigIdeasMath.com.

Identify the property. Then find the sum or product.

6. $11 + 36 = 36 + 11$ _____
7. $10 \cdot 4 = 4 \cdot 10$ _____
8. $5 \cdot (4 \cdot 2) = (5 \cdot 4) \cdot 2$ _____
9. $2 + (3 + 5) = (2 + 3) + 5$ _____
10. $2 + 3 + 4 = 2 + 4 + 3$ _____
11. $5 \cdot 2 \cdot 3 = 2 \cdot 5 \cdot 3$ _____

Show how you can use the Commutative and Associative Properties to find the sum or product using mental math.

12. $34 + 47 + 16 =$ _____
13. $5 \cdot 13 \cdot 2 =$ _____
14. $15 + 13 + 27 + 35 =$ _____
15. $9 \cdot 5 \cdot 3 \cdot 2 =$ _____
16. **COMMUTATIVITY** Describe two real-life activities that are *not* commutative. In other words, you get different results if you switch the order in which the activities are performed.

_____

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REVIEW: Distributive Property

Name _____

Key Concept and Vocabulary

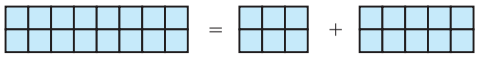
Distributive Property

$3(4 + 6) = 3 \cdot 4 + 3 \cdot 6$

$4(7 - 2) = 4 \cdot 7 - 4 \cdot 2$

Visual Model

$2(3 + 5) = 2 \cdot 3 + 2 \cdot 5$



Skill Examples

1. $3(9 + 4) = 3 \cdot 9 + 3 \cdot 4$
2. $7(10 - 3) = 7 \cdot 10 - 7 \cdot 3$
3. $6 \cdot 8 + 6 \cdot 7 = 6(8 + 7)$
4. $12 \cdot 9 - 12 \cdot 2 = 12(9 - 2)$
5. $5(2 + 5 + 3) = 5 \cdot 2 + 5 \cdot 5 + 5 \cdot 3$

Application Example

6. You buy 3 hot dogs for \$1.25 each and 3 sodas for \$0.75 each. Find the total cost.

$$3(1.25) + 3(0.75) = 3(1.25 + 0.75)$$
$$= 3(2.00)$$
$$= 6$$

∴ The total cost is \$6.00.

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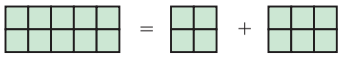
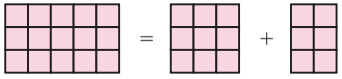
Check your answers at BigIdeasMath.com.

Use the Distributive Property to rewrite the expression.

7. $3(4 + 5) =$ _____
8. $5(8 - 3) =$ _____
9. $9(11 + 7) =$ _____
10. $8(27 - 9) =$ _____
11. $6(17 - 7) =$ _____
12. $4(7 + 3 + 2) =$ _____
13. $5 \cdot 7 + 5 \cdot 3$ _____
14. $2 \cdot 9 - 2 \cdot 6 =$ _____
15. $7 \cdot 4 + 7 \cdot 8 =$ _____
16. 
17. 
18. **MENTAL MATH** You buy 5 hot dogs for \$1.29 each and 5 sodas for \$0.71 each. Show how you can use mental math to find the total cost.
19. **EXTENSION** Does the Distributive Property apply to a combination of addition *and* subtraction? Decide using the expression $3(7 + 5 - 4)$.

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REVIEW: Exponents

Name _____

Key Concept and Vocabulary

multiplication, exponent

$2 \cdot 2 \cdot 2 = 2^3$

base

Exponent

4 to the first power

$4^1 = 4$

$4^2 = 4 \cdot 4$ — 4 squared

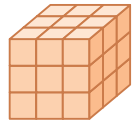
$4^3 = 4 \cdot 4 \cdot 4$ — 4 cubed

Skill Examples

1. $3^2 = 3 \cdot 3 = 9$
2. $2^4 = 2 \cdot 2 \cdot 2 \cdot 2 = 16$
3. $4^3 = 4 \cdot 4 \cdot 4 = 64$
4. $5^4 = 5 \cdot 5 \cdot 5 \cdot 5 = 625$
5. $9^5 = 9 \cdot 9 \cdot 9 \cdot 9 \cdot 9 = 59{,}049$

Application Example

6. How many small cubes are in the stack?



$3^3 = 3 \cdot 3 \cdot 3$

$= 27$

∴ 27 small cubes are in the stack.

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Check your answers at BigIdeasMath.com.

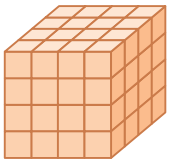
Find the value.

7. $3^4 =$ _____
8. $4^5 =$ _____
9. $12^3 =$ _____
10. $18^1 =$ _____
11. $5^6 =$ _____
12. $2^{10} =$ _____
13. $8^2 =$ _____
14. $7^3 =$ _____

Use an exponent to rewrite the expression.

15. $4 \cdot 4 \cdot 4 \cdot 4 =$ _____
16. $1 \cdot 1 \cdot 1 =$ _____
17. $5 \cdot 5 \cdot 5 =$ _____
18. $3 \cdot 3 \cdot 3 \cdot 3 \cdot 3 =$ _____

How many small cubes are in the stack?

19.
20. 
21. **FLYING SAUCERS** You saw 5 flying saucers. Each flying saucer had 5 aliens. Each alien had 5 eyes. How many alien eyes were there altogether? Explain your reasoning.

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REVIEW: Order of Operations

Name _____

Key Concept and Vocabulary

"Please Excuse My Dear Aunt Sally"

1st **P**arentheses
2nd **E**xponents
3rd **M**ultiplication and **D**ivision (from left to right)
4th **A**ddition and **S**ubtraction (from left to right)

Simplify $4^2 \div 2 + 3(9 - 5)$.

$$\begin{aligned} 4^2 \div 2 + 3(9 - 5) &= 4^2 \div 2 + 3 \cdot 4 \\ &= 16 \div 2 + 3 \cdot 4 \\ &= 8 + 12 \\ &= 20 \end{aligned}$$

Skill Examples

1. $18 \div 2 - 4 = 9 - 4 = 5$
2. $12 \cdot (6 - 2) = 12 \cdot 4 = 48$
3. $14 \cdot 3 - 19 = 42 - 19 = 23$
4. $20 \div 10 + 21 \cdot 5 = 2 + 105 = 107$
5. $(2 + 3)^2 - 5 = 25 - 5 = 20$

Application Example

6. At a museum, 4 adults pay \$5 each and 6 children pay \$3 each. What is the total cost of the tickets?

$$\begin{aligned} 4 \cdot 5 + 6 \cdot 3 &= 20 + 18 \\ &= 38 \end{aligned}$$

∴ The total cost is \$38.

PRACTICE MAKES *PURR*-FECT™

Check your answers at BigIdeasMath.com.

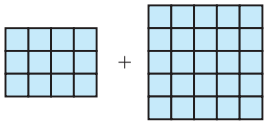
Simplify.

7. $3^2 + 5(4 - 2) =$ _____
8. $3 + 4 \div 2 =$ _____
9. $10 \div 5 \cdot 3 =$ _____
10. $4(3^3 - 8) \div 2 =$ _____
11. $3 \cdot 6 - 4 \div 2 =$ _____
12. $12 + 7 \cdot 3 - 24 =$ _____

Insert parentheses to make the statement true.

13. $5^2 - 15 \div 5 = 2$
14. $12 \cdot 2^3 + 4 = 144$
15. $91 - 21 \div 7 = 10$

Write an expression for the total area of the two rectangles. Evaluate your expression.

16. 

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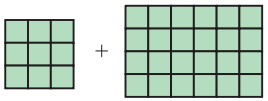
17. 

_____

18. **ADMISSION** At a baseball game, 6 adults pay \$20 each and 4 children pay \$10 each. What is the total cost of the tickets? _____

19. **INSERTING PARENTHESES** Insert parentheses in the expression $4 + 2^3 - 5 \cdot 2$ in two ways: (a) so that the value is 10 and (b) so that the value is 14.

(a) _____ (b) _____

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REVIEW: Cubes

Name _____

Key Concept and Vocabulary

multiplication

exponent

$2 \cdot 2 \cdot 2 = 2^3$

base

Visual Model

$2^3 =$

Skill Examples

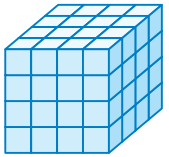
1. $2^3 = 2 \cdot 2 \cdot 2 = 8$
2. $5^3 = 5 \cdot 5 \cdot 5 = 125$
3. $7^3 = 7 \cdot 7 \cdot 7 = 343$
4. $9^3 = 9 \cdot 9 \cdot 9 = 729$
5. $20^3 = 20 \cdot 20 \cdot 20 = 8000$

Application Example

6. How many small cubes are in the stack?

$$\begin{aligned} 4^3 &= 4 \cdot 4 \cdot 4 \\ &= 64 \end{aligned}$$

∴ 64 small cubes are in the stack.



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Check your answers at BigIdeasMath.com.

Find the value.

7. $6^3 =$ _____
8. $3^3 =$ _____
9. $8^3 =$ _____
10. $10^3 =$ _____
11. $12^3 =$ _____
12. $15^3 =$ _____

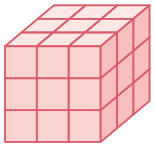
Use an exponent to rewrite the expression.

13. $16 \cdot 16 \cdot 16 =$ _____
14. $11 \cdot 11 \cdot 11 =$ _____
15. $25 \cdot 25 \cdot 25 =$ _____

Evaluate the expression when $x = 3$.

16. $x^3 + 1$ _____
17. $2x^3$ _____
18. $6x - x^3$ _____

How many small cubes are in the stack?

19. 

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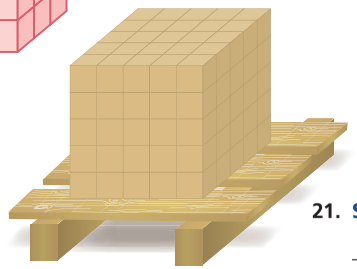
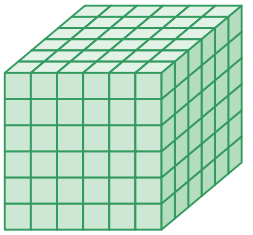


20. 

_____

21. **SHIPPING** How many boxes are on the pallet?

_____

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REVIEW: Comparing, Ordering, and Graphing Integers

Name _____

Key Concept and Vocabulary

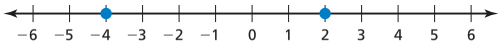
zero

. . . , −3, −2, −1, 0, 1, 2, 3, . . .

negative integers | positive integers

Visual Model

Number Line



$-4 < 2$ because -4 is to the left of 2 on the number line.

Skill Examples

1. $0 \leq 4$ "0 is less than or equal to 4"
2. $-1 > -3$ "-1 is greater than -3"
3. $-2 < -1$ "-2 is less than -1"
4. $2 > -2$ "2 is greater than -2"
5. $3 \geq 2$ "3 is greater than or equal to 2"

Application Example

6. The temperature in Seattle is 4°F. The temperature in Denver is −6°F. Which temperature is greater?

$-6 < 4$ "-6 is less than 4"

∴ The temperature is greater in Seattle.

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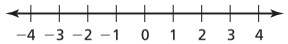
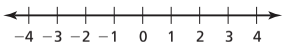
Check your answers at BigIdeasMath.com.

Graph the two numbers. Then compare them using < or >.

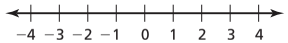
7. $-3 \square 2$



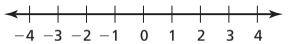
8. $-1 \square 0$



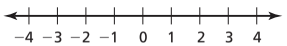
9. $-1 \square -4$



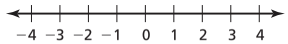
10. $1 \square 3$



11. $0 \square 2$



12. $3 \square -1$



Order the temperatures from least to greatest.

13. −5°F, 13°F, 0°F, 5°F, 2°F, 20°F

_____

14. 7°C, −4°C, −11°C, 0°C, 8°C, −12°C

_____

Use an integer to describe the real-life situation.

15. A *profit* of $5 _____
    A *loss* of $5 _____
16. A *depth* of 8 ft _____
    A *height* of 4 ft _____
17. A *decrease* of 5°F _____
    An *increase* of 8°F _____

18. **BUSINESS LOSS** During its first week, a business had a loss that was greater than $4, but less than $6. Circle each integer that could represent this loss.

−$7, −$6, −$5, −$4, −$3, −$2, −$1, $0, $1, $2, $3, $4, $5, $6, $7

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REVIEW: Coordinate Plane

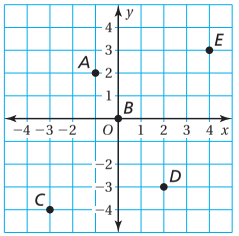
Name _____

Key Concept and Vocabulary

ordered pair

(x, y)

x-coordinate | y-coordinate



Skill Examples

1. $A(-1, 2)$ *(Quadrant II)*
2. $B(0, 0)$ *(origin)*
3. $C(-3, -4)$ *(Quadrant III)*
4. $D(2, -3)$ *(Quadrant IV)*
5. $E(4, 3)$ *(Quadrant I)*

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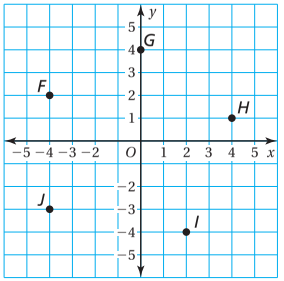
Check your answers at BigIdeasMath.com.

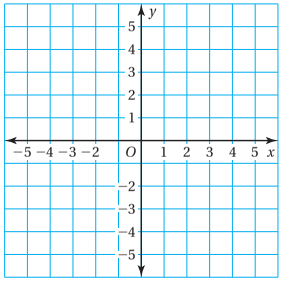
Write the ordered pair that represents the point in the coordinate plane.

6. F _____
7. G _____
8. H _____
9. I _____
10. J _____



Plot the ordered pair in the coordinate plane. Name the quadrant for the point.

11. $K(-3, 5)$ _____
12. $L(-3, 0)$ _____
13. $M(2, 5)$ _____
14. $N(4, -2)$ _____
15. $P(-2, -4)$ _____



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REVIEW: Adding and Subtracting Integers

Name _____

Key Concept and Vocabulary

terms — sum

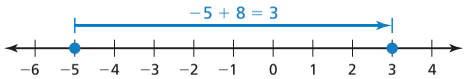
$6 + (-2) = 4$

$7 - (-3) = 10$

terms — difference

Visual Model

To add a positive number, move to the *right*.



To subtract a positive number, move to the *left*.

Skill Examples

1. $5 + (-3) = 5 - 3 = 2$
2. $5 - (-2) = 5 + 2 = 7$
3. $-2 + 4 = 2$
4. $-3 - (-2) = -3 + 2 = -1$
5. $8 - (-3) = 8 + 3 = 11$

To subtract, change the sign and add.

Application Example

6. The temperature is 8°F in the morning and drops to −5°F in the evening. What is the difference between these temperatures?

$8 - (-5) = 8 + 5$

$= 13$

∴ The difference is 13 degrees.

PRACTICE MAKES *PURR*-FECT™

Check your answers at BigIdeasMath.com.

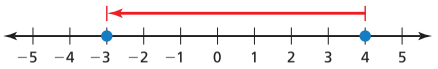
Find the sum or difference.

7. $-2 + 3 =$ ____
8. $-4 - 5 =$ ____
9. $8 - 2 =$ ____
10. $8 - (-2) =$ ____
11. $-4 - (-1) =$ ____
12. $-5 + (-5) =$ ____
13. $4 - (-8) =$ ____
14. $4 - 8 =$ ____
15. $-4 + (-6) =$ ____
16. $-4 - (-6) =$ ____
17. $10 - 13 =$ ____
18. $13 - (-10) =$ ____

Write the addition or subtraction shown by the number line.

19.

20.



21. **TEMPERATURE** The temperature is 16°F in the morning and drops to −15°F in the evening. What is the difference between these temperatures? _____

22. **SUBMARINE** A submarine is 450 feet below sea level. It descends 300 feet. What is its new position? Show your work.

_____

_____

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REVIEW: Multiplying and Dividing Integers

Name _____

Key Concept and Vocabulary

factors — product

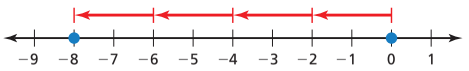
$8 \cdot (-5) = -40$

$-12 \div (-3) = 4$

dividend — divisor — quotient

Visual Model

$4 \cdot (-2) = (-2) + (-2) + (-2) + (-2)$



Skill Examples

1. $-3 \cdot (-4) = 12$
2. $-36 \div (-6) = 6$

same sign, product and quotient positive

3. $-7 \cdot 0 = 0$
4. $-10 \div 5 = -2$
5. $-5 \cdot 6 = -30$

different signs, product and quotient negative

Application Example

6. Each of your six friends owes you $5. Use integer multiplication to represent the total amount your friends owe you.

$6 \cdot (-5) = -30$

∴ The total amount owed is $30.

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Check your answers at BigIdeasMath.com.

Find the product or quotient.

7. $-3 \times (-5) =$ ____
8. $7(-3) =$ ____
9. $0 \cdot (-5) =$ ____
10. $(-5)(-7) =$ ____
11. $-8 \cdot 2 =$ ____
12. $(-5)^2 =$ ____
13. $(-3)^3 =$ ____
14. $4(-2)(-3) =$ ____
15. $-16 \div 4 =$ ____
16. $-20 \div (-5) =$ ____
17. $\frac{-9}{3} =$ ____
18. $\frac{-20}{-10} =$ ____

Complete the multiplication or division equation.

19. $-15 \div$ ____ $= -3$
20. $45 \div$ ____ $= -5$
21. ____ $\div (-20) = 5$
22. $8 \cdot$ ____ $= -64$
23. ____ $\cdot (-9) = 27$
24. $-12 \cdot$ ____ $= -96$

25. **TOTAL OWED** Each of your eight friends owes you $10. Use integer multiplication to represent the total amount your friends owe you. _____

_____

26. **TEMPERATURE** The low temperatures for a week in Edmonton, Alberta are −15°C, −12°C, −10°C, −12°C, −18°C, −20°C, and −25°C. What is the mean low temperature for the week? Show your work.

_____

_____

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REVIEW: Equivalent Fractions

Name _____

Key Concept and Vocabulary

$$\frac{2}{3} = \frac{2 \cdot 4}{3 \cdot 4} = \frac{8}{12}$$

Multiply numerator and denominator by the same number.

Visual Model

$\frac{2}{3}$

equivalent fractions

$\frac{8}{12}$

Skill Examples

1. $\frac{1}{2} = \frac{1 \cdot 2}{2 \cdot 2} = \frac{2}{4}$
2. $\frac{1}{2} = \frac{1 \cdot 3}{2 \cdot 3} = \frac{3}{6}$

$\frac{1}{2}$, $\frac{2}{4}$, and $\frac{3}{6}$ are all equivalent.

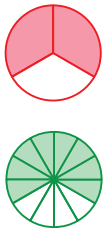
3. $\frac{3}{4} = \frac{3 \cdot 5}{4 \cdot 5} = \frac{15}{20}$
4. $\frac{4}{5} = \frac{4 \cdot 20}{5 \cdot 20} = \frac{80}{100}$

Application Example

5. You eat two-thirds of a pizza that has 12 pieces. How many pieces do you eat?

$$\frac{2}{3} = \frac{2 \cdot 4}{3 \cdot 4} = \frac{8}{12}$$

∴ You eat 8 pieces.



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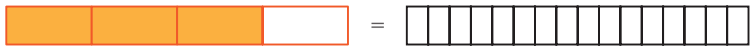
Check your answers at BigIdeasMath.com.

Write a fraction that is equivalent to the given fraction.

6. $\frac{1}{2} = \frac{\square}{4}$
7. $\frac{3}{5} = \frac{\square}{15}$
8. $\frac{4}{3} = \frac{\square}{9}$
9. $\frac{1}{3} = \frac{\square}{27}$
10. $\frac{2}{5} = \frac{\square}{20}$
11. $\frac{7}{8} = \frac{\square}{64}$
12. $\frac{3}{7} = \frac{6}{\square}$
13. $\frac{9}{4} = \frac{36}{\square}$
14. $\frac{1}{5} = \frac{10}{\square}$
15. $\frac{3}{9} = \frac{12}{\square}$
16. $\frac{7}{10} = \frac{14}{\square}$
17. $\frac{3}{8} = \frac{9}{\square}$

Shade the model so that the fraction is equivalent.

18.  =

19. =

20. **PIZZA** You eat three-fourths of a pizza that has 12 pieces. How many pieces do you eat? _____

21. **SURVEY** A survey asked 240 people if they liked the movie "Star Wars." One-third liked it, one-sixth did not like it, and one-half had not seen it. How many people are in each of the three categories? _____

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REVIEW: Simplifying Fractions

Name _____

Key Concept and Vocabulary

$$\frac{8}{12} = \frac{2 \cdot \cancel{4}}{3 \cdot \cancel{4}} = \frac{2}{3}$$

Divide numerator and denominator by common factor.

Visual Model

unsimplified

$\frac{8}{12}$

simplified

$\frac{2}{3}$

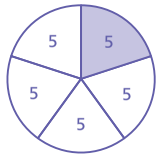
Skill Examples

1. $\frac{2}{4} = \frac{1 \cdot \cancel{2}}{2 \cdot \cancel{2}} = \frac{1}{2}$
2. $\frac{3}{6} = \frac{1 \cdot \cancel{3}}{2 \cdot \cancel{3}} = \frac{1}{2}$
3. $\frac{15}{20} = \frac{3 \cdot \cancel{5}}{4 \cdot \cancel{5}} = \frac{3}{4}$
4. $\frac{80}{100} = \frac{4 \cdot \cancel{20}}{5 \cdot \cancel{20}} = \frac{4}{5}$

Application Example

5. Five of the 25 students in your class have a Facebook account. Write this fraction in simplifed form.

$$\frac{5}{25} = \frac{1 \cdot \cancel{5}}{5 \cdot \cancel{5}} = \frac{1}{5}$$



∴ One-fifth of your class has a Facebook account.

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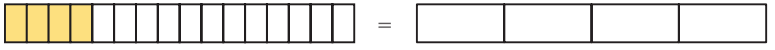
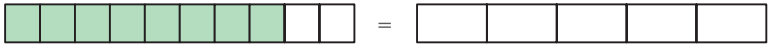
Check your answers at BigIdeasMath.com.

Simplify the fraction.

6. $\frac{16}{18} =$ _____
7. $\frac{10}{12} =$ _____
8. $\frac{6}{8} =$ _____
9. $\frac{15}{45} =$ _____
10. $\frac{12}{40} =$ _____
11. $\frac{14}{21} =$ _____
12. $\frac{6}{2} =$ _____
13. $\frac{20}{50} =$ _____
14. $\frac{12}{30} =$ _____
15. $\frac{20}{15} =$ _____
16. $\frac{75}{85} =$ _____
17. $\frac{21}{35} =$ _____

Shade the model so that the fraction is simplified.

18.  =

19.  =

20. **FACEBOOK** Eight of the 24 students in your class have a Facebook account. Write this fraction in simplified form. _____

21. **SIMPLIFYING** Write five different fractions that each simplify to two-fifths.

_____

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REVIEW: Estimating Fraction Sums and Differences

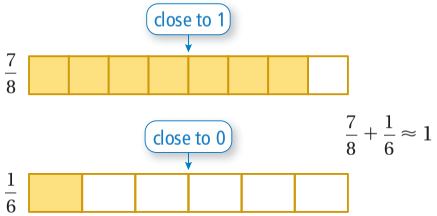
Name _____

Key Concept and Vocabulary

$\frac{7}{8} + \frac{1}{6} \approx 1 + 0 = 1$

Estimate proper fractions to be 0, $\frac{1}{2}$, or 1.

Visual Model

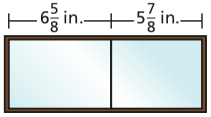


Skill Examples

1. $\frac{3}{7} + \frac{3}{8} \approx \frac{1}{2} + \frac{1}{2} = 1$
2. $\frac{8}{9} - \frac{5}{8} \approx 1 - \frac{1}{2} = \frac{1}{2}$
3. $\frac{9}{10} + \frac{6}{7} \approx 1 + 1 = 2$
4. $\frac{5}{12} - \frac{1}{16} \approx \frac{1}{2} - 0 = \frac{1}{2}$

Application Example

5. Approximate the width of the window.



$6\frac{5}{8} + 5\frac{7}{8} \approx 6\frac{1}{2} + 6$

$= 12\frac{1}{2}$

∴ The window is about $12\frac{1}{2}$ inches wide.

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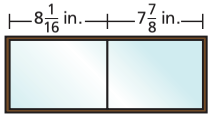
Check your answers at BigIdeasMath.com.

Estimate the sum or difference.

6. $\frac{5}{9} + \frac{3}{7} \approx$ _____
7. $\frac{6}{11} + \frac{11}{13} \approx$ _____
8. $\frac{1}{10} + \frac{15}{8} \approx$ _____
9. $\frac{11}{9} + \frac{6}{7} \approx$ _____
10. $\frac{9}{10} - \frac{5}{11} \approx$ _____
11. $\frac{17}{8} - \frac{3}{5} \approx$ _____
12. $\frac{11}{9} - \frac{1}{8} \approx$ _____
13. $\frac{5}{2} - \frac{3}{7} \approx$ _____
14. $1\frac{4}{5} + 2\frac{1}{7} \approx$ _____
15. $2\frac{4}{7} + 3\frac{3}{5} \approx$ _____
16. $5\frac{9}{10} - 4\frac{6}{10} \approx$ _____
17. $1\frac{4}{5} - \frac{11}{14} \approx$ _____

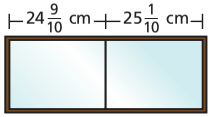
Approximate the width of the window.

18.



_____

19.



_____

20. **DISTANCE** You walked $2\frac{1}{5}$ miles on Monday and $3\frac{7}{8}$ miles on Tuesday. Estimate the total number of miles you walked on Monday and Tuesday. _____

21. **ESTIMATION STRATEGY** Estimating a fraction to be 0, $\frac{1}{2}$, or 1 does not work well with fractions such as $\frac{1}{4}$ and $\frac{3}{4}$. Why?

_____

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REVIEW: Comparing and Ordering Fractions

Name _____

Key Concept and Vocabulary

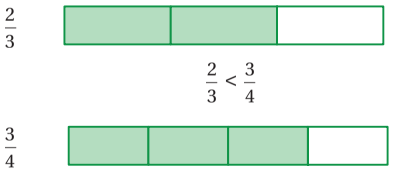
$2 \cdot 4 = 8$ $\quad$ $3 \cdot 3 = 9$

$\frac{2}{3} \times \frac{3}{4}$

Find products.

$\frac{2}{3} < \frac{3}{4}$ because $8 < 9$.

Visual Model



Skill Examples

1. $\frac{1}{2} > \frac{5}{11}$ because $1 \cdot 11 > 2 \cdot 5$.
2. $\frac{3}{6} = \frac{1}{2}$ because $3 \cdot 2 = 6 \cdot 1$.
3. $\frac{3}{8} < \frac{2}{5}$ because $3 \cdot 5 < 8 \cdot 2$.
4. $\frac{4}{9} > \frac{3}{7}$ because $4 \cdot 7 > 9 \cdot 3$.

Application Example

5. You run seven-eighths mile. Your friend runs eight-tenths mile. Who runs farther?

$\frac{7}{8} > \frac{8}{10}$ because $7 \cdot 10 > 8 \cdot 8$.

∴ You run farther.

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Check your answers at BigIdeasMath.com.

Compare the fractions using <, >, or =.

6. $\frac{4}{5} \square \frac{8}{11}$
7. $\frac{6}{7} \square \frac{5}{6}$
8. $\frac{6}{7} \square \frac{7}{8}$
9. $\frac{3}{11} \square \frac{6}{22}$
10. $\frac{9}{2} \square \frac{14}{3}$
11. $\frac{3}{9} \square \frac{1}{3}$
12. $\frac{4}{9} \square \frac{9}{20}$
13. $\frac{7}{12} \square \frac{4}{7}$
14. $\frac{2}{9} \square \frac{4}{18}$
15. $\frac{3}{8} \square \frac{4}{11}$
16. $\frac{7}{5} \square \frac{13}{9}$
17. $\frac{6}{5} \square \frac{11}{10}$

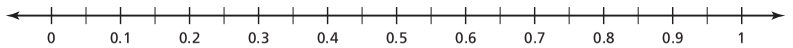
Compare the fractions models using <, >, or =.

18.

19.

20. **MILK** You drink six-eighths of a quart of milk. Your friend pours a quart of milk into four 8-fluid ounce glasses and drinks three of them. Who drinks more? _____

21. **ORDERING FRACTIONS** Order the fractions from least to greatest and graph them on a number line: $\frac{3}{8}$, $\frac{1}{4}$, $\frac{1}{3}$, and $\frac{2}{5}$.



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REVIEW: Adding and Subtracting Fractions with Like Denominators

Name _____

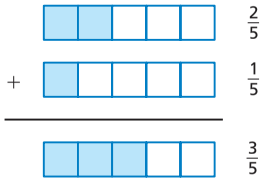
Key Concept and Vocabulary

$\frac{2}{5} + \frac{1}{5} = \frac{2+1}{5} = \frac{3}{5}$

Add or subtract numerators.

$\frac{2}{5} - \frac{1}{5} = \frac{2-1}{5} = \frac{1}{5}$

Visual Model



Skill Examples

1. $\frac{3}{8} + \frac{3}{8} = \frac{3+3}{8} = \frac{6}{8} = \frac{3}{4}$
2. $\frac{3}{4} + \frac{1}{4} = \frac{3+1}{4} = \frac{4}{4} = 1$
3. $\frac{7}{10} - \frac{4}{10} = \frac{7-4}{10} = \frac{3}{10}$
4. $\frac{13}{25} - \frac{8}{25} = \frac{13-8}{25} = \frac{5}{25} = \frac{1}{5}$

Application Example

5. On Monday, you painted two-fifths of a house. On Tuesday, you painted the same amount. How much is left?

$\frac{5}{5} - \left(\frac{2}{5} + \frac{2}{5}\right) = \frac{5}{5} - \frac{4}{5} = \frac{1}{5}$

You have one-fifth left to paint.

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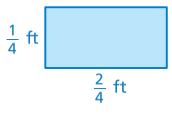
Check your answers at BigIdeasMath.com.

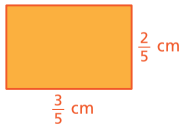
Find the sum or difference. Write your answer in simplified form.

6. $\frac{1}{9} + \frac{2}{9} =$ _____
7. $\frac{6}{11} + \frac{5}{11} =$ _____
8. $\frac{1}{10} + \frac{3}{10} =$ _____
9. $\frac{3}{4} + \frac{2}{4} =$ _____
10. $\frac{3}{8} + \frac{1}{8} =$ _____
11. $\frac{1}{5} + \frac{2}{5} + \frac{2}{5} =$ _____
12. $\frac{5}{8} - \frac{1}{8} =$ _____
13. $\frac{6}{7} - \frac{3}{7} =$ _____
14. $\frac{7}{9} - \frac{4}{9} =$ _____
15. $\frac{9}{10} - \frac{7}{10} =$ _____
16. $\frac{5}{6} - \frac{2}{6} =$ _____
17. $\frac{6}{6} - \left(\frac{1}{6} + \frac{2}{6}\right) =$ _____

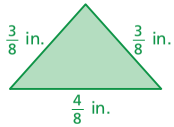
Find the perimeter of the rectangle or triangle.

18. 

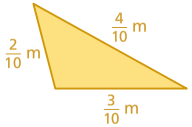
Perimeter = _____

19. 

Perimeter = _____

20. 

Perimeter = _____

21. 

Perimeter = _____

22. **REACHING YOUR GOAL** You have a savings goal. In January, you saved $\frac{2}{10}$ of your goal. In February, you saved $\frac{3}{10}$ more. How much of your goal remains? Explain.

_____

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REVIEW: Adding and Subtracting Fractions with Unlike Denominators

Name _____

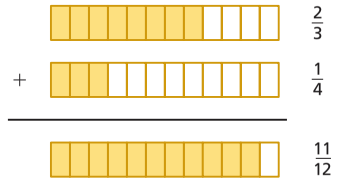
Key Concept and Vocabulary

Find products.

$\frac{2}{3} \times \frac{1}{4} = \frac{2 \cdot 4 + 3 \cdot 1}{3 \cdot 4} = \frac{11}{12}$

$\frac{2}{3} \times \frac{1}{4} = \frac{2 \cdot 4 - 3 \cdot 1}{3 \cdot 4} = \frac{5}{12}$

Visual Model



Skill Examples

1. $\frac{1}{5} + \frac{2}{3} = \frac{1 \cdot 3 + 5 \cdot 2}{5 \cdot 3} = \frac{13}{15}$
2. $\frac{1}{2} + \frac{1}{4} = \frac{1 \cdot 4 + 2 \cdot 1}{2 \cdot 4} = \frac{6}{8} = \frac{3}{4}$
3. $\frac{1}{3} - \frac{1}{4} = \frac{1 \cdot 4 - 3 \cdot 1}{3 \cdot 4} = \frac{1}{12}$
4. $\frac{3}{7} - \frac{2}{5} = \frac{3 \cdot 5 - 7 \cdot 2}{7 \cdot 5} = \frac{1}{35}$

Application Example

5. You ride your bike $\frac{3}{8}$ mile to the store. Then you ride $\frac{1}{6}$ mile to school. How far do you ride altogether?

$\frac{3}{8} + \frac{1}{6} = \frac{3 \cdot 6 + 8 \cdot 1}{8 \cdot 6} = \frac{26}{48} = \frac{13}{24}$

You ride $\frac{13}{24}$ mile.

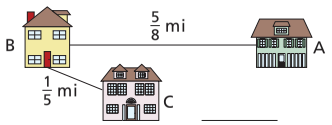
PRACTICE MAKES *PURR*-FECT™

Check your answers at BigIdeasMath.com.

Find the sum or difference. Write your answer in simplified form.

6. $\frac{1}{3} + \frac{1}{8} =$ _____
7. $\frac{2}{3} + \frac{1}{5} =$ _____
8. $\frac{3}{10} + \frac{1}{4} =$ _____
9. $\frac{1}{2} + \frac{2}{5} =$ _____
10. $\frac{3}{7} + \frac{1}{3} =$ _____
11. $\frac{1}{8} + \frac{2}{5} =$ _____
12. $\frac{5}{8} - \frac{1}{3} =$ _____
13. $\frac{5}{6} - \frac{3}{5} =$ _____
14. $\frac{5}{9} - \frac{2}{5} =$ _____
15. $\frac{7}{10} - \frac{1}{4} =$ _____
16. $\frac{3}{5} - \frac{1}{6} =$ _____
17. $\frac{1}{5} - \frac{1}{6} =$ _____

Find the total distance from House A to House B and then to House C.

18. 

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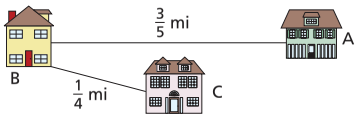
19. 

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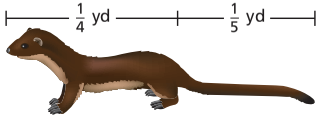
20. **WEASEL LENGTH** Find the total length of the weasel. _____



21. **IMPROVING YOUR SPEED** You swam at a rate of $\frac{3}{8}$ mile per hour in March. You swam at a rate of $\frac{3}{7}$ mile per hour in April. How much faster did you swim in April? _____

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REVIEW: Multiplying Fractions

Name _____

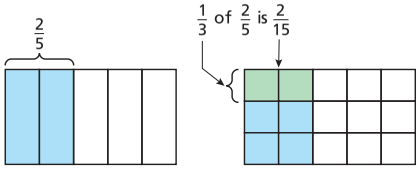
Key Concept and Vocabulary

Multiply numerators.

$\frac{1}{3} \cdot \frac{2}{5} = \frac{1 \cdot 2}{3 \cdot 5} = \frac{2}{15}$

Multiply denominators.

Visual Model



Skill Examples

1. $\frac{2}{3} \cdot \frac{1}{4} = \frac{2 \cdot 1}{3 \cdot 4} = \frac{2}{12} = \frac{1}{6}$
2. $\frac{3}{8} \times \frac{2}{9} = \frac{3 \cdot 2}{8 \cdot 9} = \frac{6}{72} = \frac{1}{12}$
3. $\left(\frac{2}{5}\right)\left(\frac{1}{4}\right) = \frac{2 \cdot 1}{5 \cdot 4} = \frac{2}{20} = \frac{1}{10}$
4. $\frac{1}{7} \cdot \frac{3}{5} = \frac{1 \cdot 3}{7 \cdot 5} = \frac{3}{35}$

Application Example

5. A recipe calls for three-fourths cup of flour. You want to make one-half of the recipe. How much flour should you use?

$\frac{1}{2} \cdot \frac{3}{4} = \frac{1 \cdot 3}{2 \cdot 4} = \frac{3}{8}$

You should use $\frac{3}{8}$ cup flour.

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Check your answers at BigIdeasMath.com.

Find the product. Write your answer in simplified form.

6. $\frac{1}{3} \cdot \frac{2}{7} =$ _____
7. $\frac{1}{2} \times \frac{1}{4} =$ _____
8. $\frac{1}{10} \cdot \frac{3}{10} =$ _____
9. $\frac{3}{2} \times \frac{2}{5} =$ _____
10. $\frac{3}{8} \times \frac{1}{2} =$ _____
11. $\left(\frac{1}{5}\right)\left(\frac{2}{5}\right) =$ _____
12. $\left(\frac{2}{3}\right)^2 =$ _____
13. $\frac{3}{2} \cdot \frac{2}{3} =$ _____
14. $\left(\frac{3}{1}\right)\left(\frac{1}{3}\right) =$ _____
15. $2 \cdot \frac{1}{4} =$ _____
16. $3 \times \frac{3}{4} =$ _____
17. $\frac{1}{3} \cdot \frac{3}{4} \cdot \frac{4}{5} =$ _____

Find the area of the rectangle or parallelogram.

18. $\frac{1}{2}$ ft, $\frac{1}{2}$ ft — Area = _____
19. $\frac{3}{10}$ cm, $\frac{1}{2}$ cm — Area = _____
20. $\frac{3}{8}$ in., $\frac{5}{8}$ in. — Area = _____
21. $\frac{2}{5}$ m, $\frac{3}{5}$ m — Area = _____

22. **OPEN-ENDED** Find three different pairs of fractions that have the same product.

□ · □ = □ □ · □ = □ □ · □ = □

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REVIEW: Dividing Fractions

Name _____

Key Concept and Vocabulary

$\frac{2}{3} \div \frac{1}{2} = \frac{2}{3} \cdot \frac{2}{1} = \frac{2 \cdot 2}{3 \cdot 1} = \frac{4}{3}$

Invert and multiply.

Visual Model

There are 2 "one-thirds" in two-thirds.

$\frac{2}{3} \div \frac{1}{3} = \frac{2}{3} \cdot \frac{3}{1} = 2$

Skill Examples

1. $\frac{2}{5} \div \frac{1}{5} = \frac{2}{5} \cdot \frac{5}{1} = \frac{2 \cdot 5}{5 \cdot 1} = 2$
2. $\frac{2}{5} \div 5 = \frac{2}{5} \cdot \frac{1}{5} = \frac{2 \cdot 1}{5 \cdot 5} = \frac{2}{25}$
3. $\frac{9}{4} \div \frac{3}{4} = \frac{9}{4} \cdot \frac{4}{3} = \frac{9 \cdot 4}{4 \cdot 3} = 3$
4. $6 \div \frac{1}{2} = \frac{6}{1} \cdot \frac{2}{1} = \frac{6 \cdot 2}{1 \cdot 1} = 12$

Application Example

5. You drive 25 miles in one-half hour. What is your average rate?

$25 \div \frac{1}{2} = \frac{25}{1} \cdot \frac{2}{1} = 50$ mi/h $\quad r = \frac{d}{t}$

Your average rate is 50 miles per hour.

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Find the quotient. Write your answer in simplified form.

6. $\frac{3}{5} \div \frac{1}{5} =$ _____
7. $4 \div \frac{1}{2} =$ _____
8. $\frac{2}{3} \div \frac{1}{6} =$ _____
9. $\frac{1}{6} \div \frac{2}{3} =$ _____
10. $\frac{2}{3} \div 2 =$ _____
11. $\frac{3}{4} \div 4 =$ _____
12. $\frac{3}{7} \div \frac{3}{7} =$ _____
13. $\frac{3}{7} \div \frac{7}{3} =$ _____
14. $5 \div \frac{1}{2} =$ _____
15. $\frac{9}{4} \div \frac{1}{4} =$ _____
16. $\frac{1}{4} \div \frac{1}{2} =$ _____
17. $\frac{3}{11} \div 11 =$ _____

Find the height of the rectangle or parallelogram.

18. ft, $\frac{1}{2}$ ft — Area = $\frac{1}{4}$ ft^2
19. cm, $\frac{2}{5}$ cm — Area = $\frac{2}{25}$ cm^2
20. in., $\frac{3}{8}$ in. — Area = $\frac{3}{16}$ in.^{2}
21. m, $\frac{1}{10}$ m — Area = $\frac{1}{50}$ m^2

22. **SPEED** You drive 15 miles in one-fourth hour. What is your average speed? _____

23. **MAGNETIC TAPE** A refrigerator magnet uses $\frac{5}{8}$ inch of magnetic tape. How many refrigerator magnets can you make with 10 inches of magnetic tape? Explain.

_____

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REVIEW: Simplifying Complex Fractions

Name _____

Key Concept and Vocabulary

A complex fraction is a fraction that contains a fraction in its numerator, denominator, or both. To simplify a complex fraction, divide its numerator by its denominator.

Algebra: $\dfrac{\frac{a}{b}}{\frac{c}{d}} = \dfrac{a}{b} \div \dfrac{c}{d} = \dfrac{a}{b} \cdot \dfrac{d}{c}$, where $b, c, d \neq 0$

Numbers: $\dfrac{\frac{2}{3}}{\frac{5}{6}} = \dfrac{2}{3} \div \dfrac{5}{6} = \dfrac{2}{3} \cdot \dfrac{6}{5} = \dfrac{4}{5}$

Skill Examples

1. $\dfrac{\frac{5}{8}}{4} = \dfrac{5}{8} \div 4 = \dfrac{5}{8} \cdot \dfrac{1}{4} = \dfrac{5}{32}$

2. $\dfrac{15}{\frac{9}{10}} = 15 \div \dfrac{9}{10} = \dfrac{15}{1} \cdot \dfrac{10}{9} = \dfrac{50}{3}$

3. $\dfrac{\frac{1}{3}}{\frac{5}{7}} = \dfrac{1}{3} \div \dfrac{5}{7} = \dfrac{1}{3} \cdot \dfrac{7}{5} = \dfrac{7}{15}$

4. $\dfrac{\frac{9}{16}}{\frac{3}{8}} = \dfrac{9}{16} \div \dfrac{3}{8} = \dfrac{9}{16} \cdot \dfrac{8}{3} = \dfrac{3}{2}$

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Check your answers at BigIdeasMath.com

Simplify the complex fraction.

5. $\dfrac{\frac{3}{2}}{6} =$ _____

6. $\dfrac{20}{\frac{4}{5}} =$ _____

7. $\dfrac{\frac{9}{2}}{\frac{12}{7}} =$ _____

8. $\dfrac{\frac{7}{10}}{\frac{9}{20}} =$ _____

9. $\dfrac{\frac{2}{3}}{\frac{16}{27}} =$ _____

10. $\dfrac{5}{\frac{7}{10}} =$ _____

11. $\dfrac{\frac{12}{17}}{8} =$ _____

12. $\dfrac{\frac{3}{14}}{\frac{13}{49}} =$ _____

13. $\dfrac{\frac{27}{32}}{\frac{7}{8}} =$ _____

14. $\dfrac{\frac{9}{10}}{3} =$ _____

15. $\dfrac{6}{\frac{1}{6}} =$ _____

16. $\dfrac{\frac{4}{5}}{\frac{22}{25}} =$ _____

17. $\dfrac{24}{\frac{18}{7}} =$ _____

18. $\dfrac{\frac{1}{4}}{\frac{1}{10}} =$ _____

19. $\dfrac{\frac{3}{5}}{16} =$ _____

20. $\dfrac{\frac{16}{21}}{\frac{8}{9}} =$ _____

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REVIEW: Mixed Numbers and Improper Fractions

Name _____

Key Concept and Vocabulary

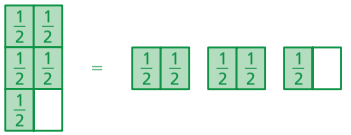
$\frac{5}{2} = 2\frac{1}{2}$

improper fraction

mixed number

Visual Model

$\frac{5}{2} = 2\frac{1}{2}$



Skill Examples

1. $\dfrac{7}{3} = 2\dfrac{1}{3}$

2. $\dfrac{8}{4} = 2$

3. $2\dfrac{1}{4} = \dfrac{8}{4} + \dfrac{1}{4} = \dfrac{9}{4}$

4. $3\dfrac{3}{5} = \dfrac{15}{5} + \dfrac{3}{5} = \dfrac{18}{5}$

Application Example

5. During a month, you used 13 half-hours of phone time. How many hours did you use?

13 halves → $\dfrac{13}{2} = 6\dfrac{1}{2}$ ← 6 and one-half

You used $6\frac{1}{2}$ hours.

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Check your answers at BigIdeasMath.com.

Write the improper fraction as a mixed number.

6. $\dfrac{4}{3} =$ _____

7. $\dfrac{3}{2} =$ _____

8. $\dfrac{8}{3} =$ _____

9. $\dfrac{9}{6} =$ _____

10. $\dfrac{7}{4} =$ _____

11. $\dfrac{28}{3} =$ _____

12. $\dfrac{19}{4} =$ _____

13. $\dfrac{11}{2} =$ _____

Write the mixed number as an improper fraction.

14. $2\dfrac{2}{3} =$ _____

15. $5\dfrac{1}{4} =$ _____

16. $3\dfrac{2}{5} =$ _____

17. $1\dfrac{3}{8} =$ _____

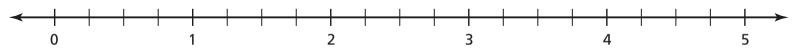
18. Rewrite the sentence using a mixed number. Susan drinks five-fourths of a quart of milk.

_____

19. Rewrite the sentence using an improper fraction. Tom runs for 2 and one quarter hours.

_____

20. **NUMBER LINE** Graph the improper fractions on the number line: $\frac{5}{3}$, $\frac{7}{2}$, and $\frac{13}{3}$.



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REVIEW: Adding and Subtracting Mixed Numbers

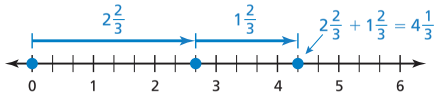
Name _____

Key Concept and Vocabulary

$2\frac{2}{3} + 1\frac{2}{3} = 3\frac{4}{3} = 4\frac{1}{3}$

$5\frac{1}{5} - 1\frac{3}{5} = 4\frac{6}{5} - 1\frac{3}{5} = 3\frac{3}{5}$

Visual Model

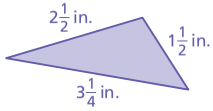


Skill Examples

1. $3\frac{1}{4} + 2\frac{1}{2} = 3\frac{1}{4} + 2\frac{2}{4} = 5\frac{3}{4}$
2. $5\frac{3}{5} + 1\frac{4}{5} = 6\frac{7}{5} = 7\frac{2}{5}$
3. $5\frac{5}{6} - 3\frac{1}{3} = 5\frac{5}{6} - 3\frac{2}{6} = 2\frac{3}{6} = 2\frac{1}{2}$
4. $4\frac{1}{3} - 1\frac{2}{3} = 3\frac{4}{3} - 1\frac{2}{3} = 2\frac{2}{3}$

Application Example

5. Find the perimeter of the triangle.



$2\frac{1}{2} + 1\frac{1}{2} + 3\frac{1}{4} = 7\frac{1}{4}$

∴ The perimeter is $7\frac{1}{4}$ inches.

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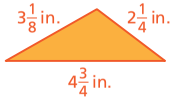
Check your answers at BigIdeasMath.com.

Find the sum or difference. Write your answer in simplified form.

6. $4\frac{1}{4} + 2\frac{1}{4} =$ _____
7. $1\frac{2}{5} + 3\frac{1}{5} =$ _____
8. $5\frac{4}{5} + 3\frac{4}{5} =$ _____
9. $2\frac{2}{3} + 4\frac{1}{6} =$ _____
10. $7\frac{2}{3} + 3\frac{1}{3} =$ _____
11. $5\frac{1}{2} + 5\frac{1}{2} =$ _____
12. $3\frac{1}{4} - 2\frac{1}{2} =$ _____
13. $4\frac{3}{4} - 1\frac{1}{2} =$ _____
14. $8\frac{3}{5} - 5\frac{3}{5} =$ _____
15. $7\frac{1}{6} - 3\frac{1}{3} =$ _____
16. $1\frac{1}{4} - \frac{1}{2} =$ _____
17. $6\frac{3}{4} - 6\frac{1}{2} =$ _____

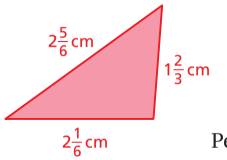
Find the perimeter of the triangle.

18.



Perimeter = _____

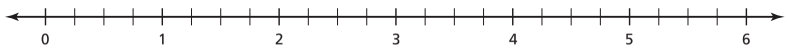
19.



Perimeter = _____

20. **HEIGHT** Sarah was $50\frac{1}{4}$ inches tall when she was 12 years old. She was $48\frac{1}{2}$ inches tall when she was 11 years old. How much did she grow during the year? _____

21. **NUMBER LINE** Show the sum graphically on the number line: $3\frac{1}{4} + 2\frac{1}{2}$.



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REVIEW: Multiplying Mixed Numbers

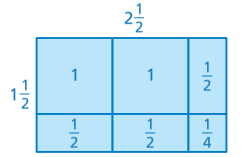
Name _____

Key Concept and Vocabulary

$2\frac{1}{2} \times 1\frac{1}{2} = \frac{5}{2} \times \frac{3}{2} = \frac{15}{4}$

Rewrite as improper fractions.

Visual Model



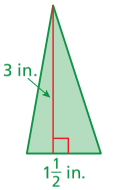
Area $= 2\frac{1}{2} \times 1\frac{1}{2} = \frac{15}{4} = 3\frac{3}{4}$

Skill Examples

1. $3\frac{1}{2} \times 2\frac{1}{3} = \frac{7}{2} \times \frac{7}{3} = \frac{49}{6} = 8\frac{1}{6}$
2. $1\frac{3}{4} \cdot 4\frac{1}{2} = \frac{7}{4} \cdot \frac{9}{2} = \frac{63}{8} = 7\frac{7}{8}$
3. $2\frac{2}{5} \times 1\frac{2}{3} = \frac{12}{5} \times \frac{5}{3} = \frac{60}{15} = 4$
4. $\left(1\frac{1}{2}\right)\left(1\frac{1}{2}\right) = \left(\frac{3}{2}\right)\left(\frac{3}{2}\right) = \frac{9}{4} = 2\frac{1}{4}$

Application Example

5. Find the area of the triangle.



Area $= \frac{1}{2} \cdot 1\frac{1}{2} \cdot 3$

$= \frac{1}{2} \cdot \frac{3}{2} \cdot \frac{3}{1} = \frac{9}{4} = 2\frac{1}{4}$

∴ The area is $2\frac{1}{4}$ square inches.

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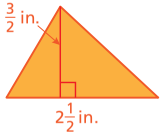
Check your answers at BigIdeasMath.com.

Find the product. Write your answer as a whole number or mixed number in simplified form.

6. $2\frac{1}{3} \times 1\frac{1}{3} =$ _____
7. $4\frac{2}{3} \times 1\frac{1}{2} =$ _____
8. $1\frac{1}{2} \times 3 =$ _____
9. $5\frac{1}{6} \times \frac{1}{3} =$ _____
10. $\frac{3}{4} \cdot 3\frac{1}{2} =$ _____
11. $5 \cdot 4\frac{1}{2} =$ _____
12. $2\frac{1}{7} \cdot \frac{7}{15} =$ _____
13. $1\frac{3}{5} \cdot \frac{3}{8} =$ _____
14. $\left(1\frac{1}{3}\right)^2 =$ _____
15. $\left(1\frac{1}{4}\right)^3 =$ _____
16. $\left(2\frac{1}{2}\right)\left(3\frac{1}{3}\right) =$ _____
17. $\left(3\frac{1}{2}\right)\left(\frac{1}{2}\right)^2 =$ _____

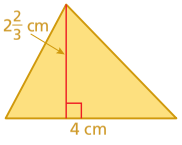
Find the area of the triangle.

18.



Area = _____

19.



Area = _____

20. **RECIPE** Rewrite the recipe so that each item is one-third of the full recipe.

$2\frac{1}{2}$ cups flour
2 tsp baking powder
4 Tbsp butter
$\frac{1}{2}$ tsp salt
$\frac{3}{4}$ cup milk

_____ cups flour
_____ tsp salt
_____ tsp baking powder
_____ cup milk
_____ Tbsp butter

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REVIEW: Dividing Mixed Numbers

Name _____

Key Concept and Vocabulary

Rewrite as improper fractions.

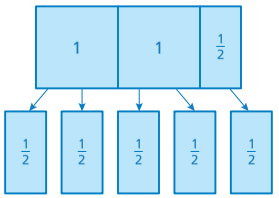
$$2\frac{1}{2} \div 5 = \frac{5}{2} \div \frac{5}{1}$$
$$= \frac{5}{2} \times \frac{1}{5}$$
$$= \frac{1}{2}$$

Visual Model

Divide $2\frac{1}{2}$ into five equal parts.

Each part is $\frac{1}{2}$.

$$2\frac{1}{2} \div 5 = \frac{1}{2}$$



Skill Examples

1. $5 \div 2\frac{1}{2} = \frac{5}{1} \div \frac{5}{2} = \frac{5}{1} \times \frac{2}{5} = 2$
2. $3\frac{3}{4} \div 2\frac{1}{2} = \frac{15}{4} \div \frac{5}{2} = \frac{15}{4} \times \frac{2}{5} = \frac{3}{2} = 1\frac{1}{2}$
3. $4\frac{1}{6} \div 1\frac{2}{3} = \frac{25}{6} \div \frac{5}{3} = \frac{25}{6} \times \frac{3}{5} = \frac{5}{2} = 2\frac{1}{2}$
4. $7\frac{1}{3} \div 11 = \frac{22}{3} \div \frac{11}{1} = \frac{22}{3} \times \frac{1}{11} = \frac{2}{3}$

Application Example

5. You need $2\frac{1}{2}$ inches of ribbon to make a Blue-Ribbon award. How many awards can you make with 35 inches of ribbon?

$$35 \div 2\frac{1}{2} = \frac{35}{1} \div \frac{5}{2} = \frac{35}{1} \times \frac{2}{5} = 14$$

∴ You can make 14 awards.

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Check your answers at BigIdeasMath.com.

Find the quotient. Write your answer as a whole or mixed number in simplest form.

6. $4\frac{1}{2} \div 9 =$ _____
7. $3\frac{3}{7} \div 8 =$ _____
8. $4\frac{2}{3} \div 7 =$ _____
9. $1\frac{7}{9} \div 4 =$ _____
10. $8 \div 1\frac{1}{3} =$ _____
11. $32 \div 3\frac{1}{5} =$ _____
12. $11 \div 2\frac{3}{4} =$ _____
13. $9 \div 1\frac{1}{2} =$ _____
14. $5\frac{1}{2} \div \frac{1}{2} =$ _____
15. $\frac{1}{2} \div 1\frac{1}{2} =$ _____
16. $1\frac{1}{4} \div 1\frac{1}{4} =$ _____
17. $3\frac{1}{2} \div 1\frac{1}{3} =$ _____

Find the missing dimension.

18. $2\frac{1}{2}$ ft; Area = 10 ft²; ____ ft

19. ____ cm; $5\frac{1}{3}$ cm; Area = 16 cm²

20. **RED RIBBONS** You need $3\frac{1}{2}$ inches of ribbon to make a Red-Ribbon award. How many awards can you make with 35 inches of ribbon? _____

21. **SHIPPING** You are stacking books into a shipping box that is 15 inches high. Each book is $1\frac{1}{4}$ inches thick. How many books can you fit in a stack? _____

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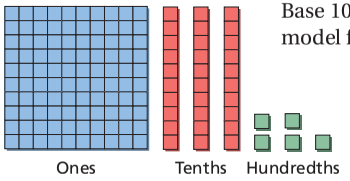
REVIEW: Decimal Place Value

Name _____

Key Concept and Vocabulary

Visual Model



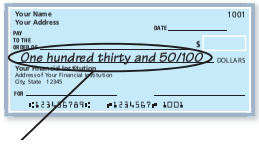
Base 10 block model for 1.35

Skill Examples

1. 156 = "One hundred fifty-six"
2. 1409 = "One thousand four hundred nine"
3. 14.009 = "Fourteen *and* nine thousandths"
4. 2.07 = "Two *and* seven hundredths"

Application Example

5. You are writing a check for $130.50. Write this amount in words.



∴ One hundred thirty *and* 50/100.

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Check your answers at BigIdeasMath.com.

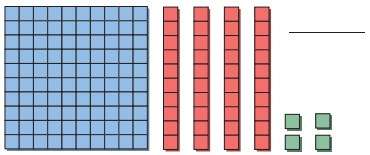
Write the number in words.

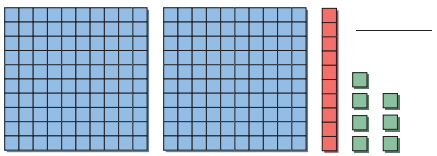
6. 27.35 = _____
7. 1560 = _____

Write the decimal number for the words.

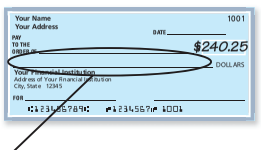
8. "Five thousand seven hundred forty-nine *and* thirteen hundredths" = _____
9. "Nine hundred eighteen *and* fifty-seven thousandths" = _____

Write the decimal given by the model.

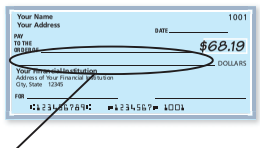
10.  _____

11.  _____

Write the words for the check.

12. 

_____

13. 

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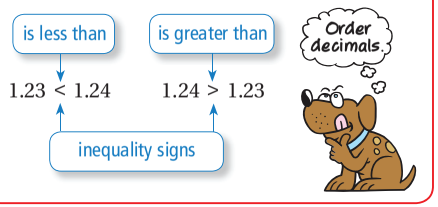
REVIEW: Comparing and Ordering Decimals

Name _____

Key Concept and Vocabulary



Visual Model

Number Line

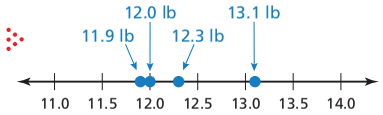
1.23 < 1.24 because 1.23 is to the left of 1.24 on the number line.

Skill Examples

1. 34.07 > 30.47
2. 12.35 < 12.351
3. 17,056.4 > 17,055.9
4. 0.004 < 0.030
5. 0.1003 > 0.0999

Application Example

6. Order the weights from least to greatest: 12.3 lb, 11.9 lb, 12.0 lb, 13.1 lb.



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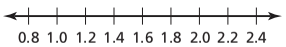
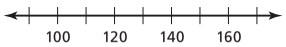
Check your answers at BigIdeasMath.com.

Graph the two numbers. Then compare them using <, >, or =.

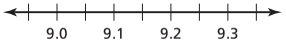
7. 1.6 ☐ 1.7



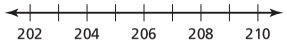
8. 130.5 ☐ 103.5



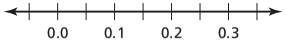
9. 9.2 ☐ 9.02



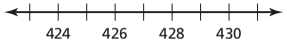
10. 203.7 ☐ 207.3



11. 0.32 ☐ 0.132



12. 427.8 ☐ 428.3



Order the lengths from least to greatest.

13. 32.5 ft, 29.9 ft, 32.3 ft, 31.7 ft, 31.75 ft

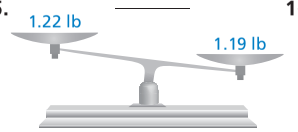
_____

14. 0.5 mi, 0.05 mi, 0.47 mi, 1.02 mi, 0.08 mi

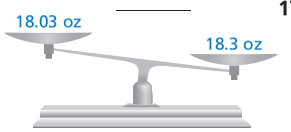
_____

Is the scale balanced correctly?

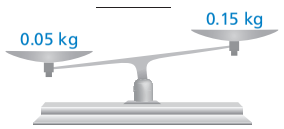
15. _____



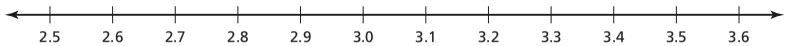
16. _____



17. _____



18. **NUMBER LINE** On the number line, shade all values of x for which $x \leq 3.2$ and $x \geq 2.9$.



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REVIEW: Fractions and Decimals

Name _____

Key Concept and Vocabulary

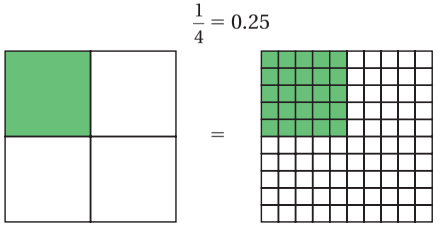
$\frac{1}{10} = 0.1$ $\frac{1}{5} = 0.2$ $\frac{2}{5} = 0.4$

$\frac{1}{4} = 0.25$ $\frac{1}{2} = 0.5$ $\frac{3}{4} = 0.75$

$\frac{1}{8} = 0.125$ $\frac{3}{8} = 0.375$ $\frac{5}{8} = 0.625$

Common Fractions

Visual Model



Skill Examples

1. $0.6 = \frac{6}{10} = \frac{3}{5}$

2. $\frac{4}{5} = \frac{4 \cdot 2}{5 \cdot 2} = \frac{8}{10} = 0.8$

3. $0.875 = \frac{875}{1000} = \frac{7 \cdot \cancel{125}}{8 \cdot \cancel{125}} = \frac{7}{8}$

4. $\frac{1}{3} = 0.333\ldots = 0.\overline{3}$

$$3\overline{)1.0000\ldots}\quad 0.3333\ldots$$

Application Example

5. You put 16.75 gallons of gas in your car. Write this decimal as a mixed number.

$$16.75 = 16 + 0.75 = 16\frac{3}{4}$$

You put $16\frac{3}{4}$ gallons of gas in your car.

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Check your answers at BigIdeasMath.com.

Write the fraction as a decimal.

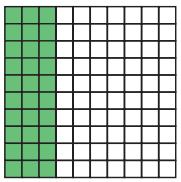
6. $\frac{3}{4} =$ _____
7. $\frac{7}{10} =$ _____
8. $\frac{3}{25} =$ _____
9. $\frac{7}{20} =$ _____
10. $\frac{19}{100} =$ _____
11. $\frac{11}{50} =$ _____
12. $\frac{2}{3} =$ _____
13. $\frac{1}{6} =$ _____

Write the decimal as a fraction.

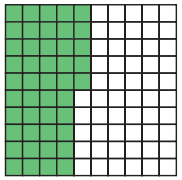
14. 0.4 = _____
15. 0.35 = _____
16. 0.6 = _____
17. 1.5 = _____

Write the number represented by the model as a decimal and as a simplified fraction.

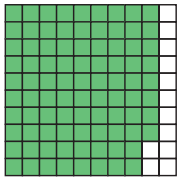
18. _____ = _____



19. _____ = _____



20. _____ = _____



21. **GAS** You put 9.25 gallons of gas in your car. Write this decimal as a mixed number. _____

22. **MULTIPLE FORMS** Write the decimal 0.35 in two ways. One with a denominator of 100 and one with a denominator of 1000. _____

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REVIEW: Rounding Decimals

Name _____

Key Concept and Vocabulary

Round up. Decision digit is 5, 6, 7, 8, or 9.

Round down. Decision digit is 0, 1, 2, 3, or 4.

Visual Model

Round to the *nearest tenth*.

3.63 rounds to 3.6 because 3.63 is closer to 3.6 than to 3.7.

Skill Examples

1. To the *nearest tenth:* 4.78 rounds to 4.8. Round up.
2. To the *nearest hundredth:* 0.143 rounds to 0.14. Round down.
3. To the *nearest thousandth:* 0.0029 rounds to 0.003. Round up.

Application Example

4. Gasoline costs $2.899 per gallon. Round this price to the nearest cent.

   To the *nearest cent:* 2.899 rounds to 2.90.

   The gasoline costs about $2.90 per gallon.

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Check your answers at BigIdeasMath.com.

Round to the nearest tenth. (The symbol ≈ means "is approximately to.")

5. 0.16 ≈ _____
6. 0.038 ≈ _____
7. 1.05 ≈ _____
8. 10.049 ≈ _____

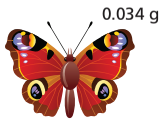
Round to the nearest hundredth.

9. 0.0123 ≈ _____
10. 2.406 ≈ _____
11. 0.463 ≈ _____
12. 12.006 ≈ _____

Round to the nearest thousandth.

13. 0.0456 ≈ _____
14. 4.5062 ≈ _____
15. 1.0043 ≈ _____
16. 0.6666 ≈ _____

Round the butterfly's weight to the nearest hundredth of a gram.

17. 

Weight ≈ _____

18.

Weight ≈ _____

19.

Weight ≈ _____

20. **PRICE OF GAS** Gasoline costs $2.379 per gallon. Round this price to the nearest cent. _____

21. **BUTTERFLY WEIGHTS** All species of butterflies weigh between 0.003 gram and 3 grams. Explain why it would not make sense to round some butterfly weights to the nearest hundredth of a gram.

_____

_____

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REVIEW: Estimating Decimal Sums and Differences

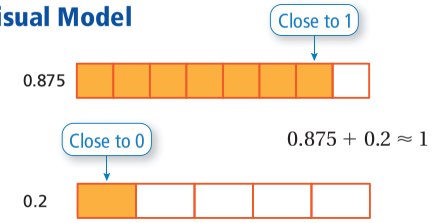
Name _____

Key Concept and Vocabulary

$1.46 + 2.63 \approx 1.5 + 2.5 = 4$

Estimate decimal part to be 0.0, 0.5, or 1.0.

Visual Model

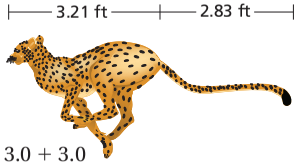


Skill Examples

1. $4.36 + 2.87 \approx 4.5 + 3.0 = 7.5$
2. $9.78 - 5.46 \approx 10.0 - 5.5 = 4.5$
3. $5.13 - 3.58 \approx 5.0 - 3.5 = 1.5$
4. $2.94 + 4.08 \approx 3.0 + 4.0 = 7.0$

Application Example

5. Approximate the total length of the cheetah.



$3.21 + 2.83 \approx 3.0 + 3.0 = 6.0$

The cheetah's total length is about 6 feet.

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Check your answers at BigIdeasMath.com.

Estimate the sum or difference.

6. 3.65 − 2.72 ≈ _____
7. 9.03 − 6.78 ≈ _____
8. 2.35 + 5.67 ≈ _____
9. 8.21 − 4.11 ≈ _____
10. 5.68 + 4.38 ≈ _____
11. 3.92 + 3.92 ≈ _____
12. 2.61 + 3.45 ≈ _____
13. 2.07 − 1.45 ≈ _____
14. 10.04 − 6.79 ≈ _____

Approximate the total cost of the two shirts.

15.

_____

16.

_____

17. **SHOPPING** At the grocery store, you buy items for $1.79, $3.15, $2.45, $9.08, and $3.49. Estimate the total amount you spend. _____

18. **MENTAL MATH** You buy 6 hamburgers that cost $3.45 each. Using only mental math, estimate the total amount of the 6 hamburgers.

_____

_____

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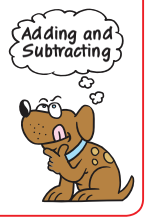
REVIEW: Adding and Subtracting Decimals

Name _____

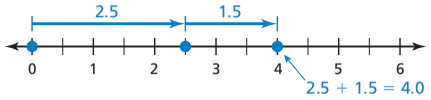
Key Concept and Vocabulary

$$\begin{array}{r} 5.7 \\ +\ 3.36 \\ \hline 9.06 \end{array} \qquad \begin{array}{r} 12.72 \\ -\ 3.84 \\ \hline 8.88 \end{array}$$

Align on decimal point.



Visual Model



Skill Examples

1. $\begin{array}{r} 134.12 \\ +\ 25.485 \\ \hline 159.605 \end{array}$

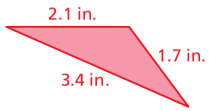
2. $\begin{array}{r} 0.135 \\ +\ 0.14 \\ \hline 0.275 \end{array}$

3. $\begin{array}{r} 32.000 \\ -\ 9.451 \\ \hline 22.549 \end{array}$

4. $\begin{array}{r} 1.405 \\ -\ 0.55 \\ \hline 0.855 \end{array}$

Application Example

5. Find the perimeter of the triangle.



$2.1 + 1.7 + 3.4 = 7.2$

∴ The perimeter is 7.2 inches.

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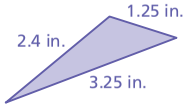
Check your answers at BigIdeasMath.com.

Find the sum or difference.

6. $4.75 + 3.56 =$ _____
7. $9.0 - 1.507 =$ _____
8. $2.4 + 2.04 =$ _____
9. $112.5 + 24.52 =$ _____
10. $5.7 - 4.81 =$ _____
11. $20 - 12.5 =$ _____
12. $2.3 + 3.4 + 5.9 =$ _____
13. $3.4 + 5.6 - 2.3 =$ _____
14. $10.0 - (4.5 + 2.3) =$ _____

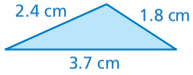
Find the perimeter of the triangle.

15.



Perimeter = _____

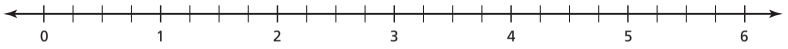
16.



Perimeter = _____

17. **SHOPPING** You take $20 to the store. You buy a magazine for $3.65 and a birthday card for $5.29. How much money do you have left? _____

18. **NUMBER LINE** Show the sum graphically on the number line: $1.75 + 3.5$.



REVIEW: Multiplying Decimals

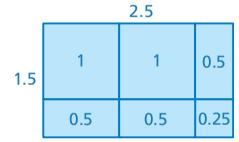
Name _____

Key Concept and Vocabulary

$$\begin{array}{r} 2.1\ 5 \\ \times\ 3.2 \\ \hline 4\ 3\ 0 \\ 6\ 4\ 5 \\ \hline 6.8\ 8\ 0 \end{array}$$

← 2 decimal places
← + 1 decimal place
← 3 decimal places

Visual Model



Area $= 2.5 \times 1.5 = 3.75$

Skill Examples

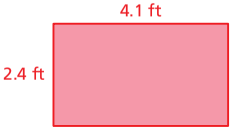
1. $\begin{array}{r} 4\ 3.8 \\ \times\ 1.5 \\ \hline 21\ 9\ 0 \\ 4\ 3\ 8 \\ \hline 65.7\ 0 \end{array}$

2. $\begin{array}{r} 0.327 \\ \times\ 24 \\ \hline 1\ 308 \\ 654 \\ \hline 7.848 \end{array}$

3. $\begin{array}{r} 3\ 2.5 \\ \times\ 1.1\ 3 \\ \hline 9\ 7\ 5 \\ 3\ 2\ 5 \\ 3\ 2\ 5 \\ \hline 3\ 6.7\ 2\ 5 \end{array}$

Application Example

4. Find the area of the rectangle.



$2.4 \times 4.1 = 9.84$

∴ The area is 9.84 square feet.

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Find the product.

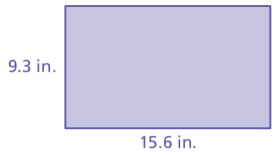
5. $3.02 \times 5.2 =$ _____
6. $1.75 \times 1 =$ _____
7. $(9.004)(0) =$ _____
8. $(4.05)^2 =$ _____
9. $2.25 \times 4 =$ _____
10. $(100.5)(90) =$ _____
11. $19.4 \times 5.05 =$ _____
12. $(1.2)(1.3)(1.4) =$ _____
13. $115 \times 3.2 =$ _____
14. $16(0.375) =$ _____
15. $(2.347)(1.8) =$ _____
16. $(1.5)^3 =$ _____

Find the area of the rectangle.

17.

Area = _____

18.



Area = _____

19. **APPLES** Apples cost $3.45 per pound. Find the cost of 2.6 pounds of apples. _____

20. **PEACHES** Peaches cost $4.29 per pound. Find the cost of two and a quarter pounds of peaches. Show your work. _____

REVIEW: Dividing Decimals

Name _____

Key Concept and Vocabulary

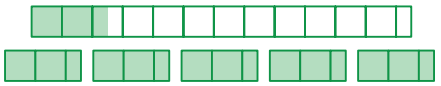
$5.2\overline{)31.408} \rightarrow 52\overline{)314.08}$

$$\begin{array}{r} 6.04 \\ 52\overline{)314.08} \\ \underline{312} \\ 2\,08 \\ \underline{2\,08} \\ 0 \end{array}$$

Move decimals 1 place.

Visual Model

$12.5 \div 5 = 2.5$



When you divide 12.5 into 5 equal parts, each part will be 2.5.

Skill Examples

1. $65.3 \div 10 = 6.53$
2. $65.3 \div 100 = 0.653$
3. $65.3 \div 1000 = 0.0653$
4. $65.3 \div 10{,}000 = 0.00653$

Divide by a power of 10 by moving the decimal point.

Application Example

5. A prize of \$104.32 is divided equally among four people. How much does each person get?

$104.32 \div 4 = 26.08$

∴ Each person gets \$26.08.

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Check your answers at BigIdeasMath.com.

Find the quotient.

6. $5.2 \div 10 =$ _____
7. $73.1 \div 100 =$ _____
8. $1500 \div 1000 =$ _____
9. $18.98 \div 3.65 =$ _____
10. $0.598 \div 2 =$ _____
11. $19.003 \div 1 =$ _____
12. $3.42 \div 0.36 =$ _____
13. $78.4 \div 1.4 =$ _____
14. $1000 \div 12.5 =$ _____
15. $0.45 \div 0.0125 =$ _____
16. $29.45 \div 4.75 =$ _____
17. $19.7 \div 0.1 =$ _____

Find the width of the rectangle.

18. ___ cm, 6.8 cm, Area = 35.36 cm^2

19. ___ in., 15.2 in., Area = 129.2 $in.^2$

20. **DRIVING TRIP** You drive 1400 miles in 3.5 days. What is the average number of miles you drive per day? _____

21. **METRIC SYSTEM** There are 2.54 centimeters in one inch. How many inches are there in 51.78 centimeters? Round your answer to the nearest tenth of an inch. _____

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REVIEW: Percents

Name _____

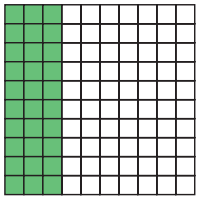
Key Concept and Vocabulary

$30\% = \frac{30}{100}$

30 — per — cent (100)

Visual Model

30% is equal to 30 parts out of 100 parts.



Skill Examples

30% of 10 is 3: $\frac{30}{100} \cdot 10 = 3$

1. 30% of 10 is 3: $\frac{30}{100} \cdot 10 = 3$
2. 25% of 8 is 2: $\frac{25}{100} \cdot 8 = 2$
3. 50% of 24 is 12: $\frac{50}{100} \cdot 24 = 12$
4. 75% of 80 is 60: $\frac{75}{100} \cdot 80 = 60$

Application Example

5. You earn \$100,000 and have to pay 40% federal income tax. How much in federal income tax do you pay?

40% of 100,000 is 40,000.

∴ You pay \$40,000 in federal income tax.

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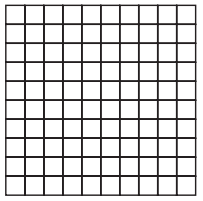
Check your answers at BigIdeasMath.com.

Find the percent.

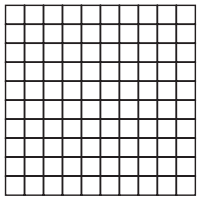
6. 20% of 50 = _____
7. 10% of 80 = _____
8. 1% of 100 = _____
9. 25% of 16 = _____
10. 30% of 40 = _____
11. 100% of 5 = _____
12. 60% of 60 = _____
13. 75% of 40 = _____
14. 25% of 200 = _____
15. 10% of 120 = _____
16. 0% of 10 = _____
17. 50% of 42 = _____

Shade the model to show the given percent.

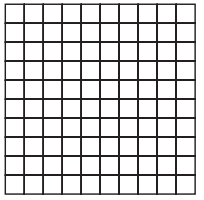
18. 25%



19. 82%



20. 37%



21. **TEST SCORE** You take a test that has 20 questions and you get 80% of the questions correct. How many questions do you get correct? _____

22. **SALES TAX** You buy \$50 worth of clothes. The sales tax is 8%. How much sales tax do you pay? _____

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REVIEW: Percents and Fractions

Name _____

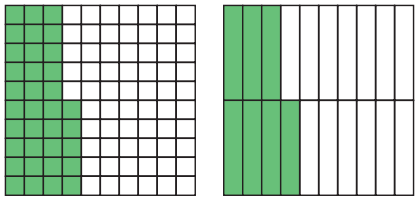
Key Concept and Vocabulary

$$35\% = \frac{35}{100} = \frac{5 \cdot 7}{5 \cdot 20} = \frac{7}{20}$$

Write percent as a fraction in simplest form.

Visual Model

$35\% = \frac{7}{20}$



Skill Examples

1. $40\% = \frac{40}{100} = \frac{20 \cdot 2}{20 \cdot 5} = \frac{2}{5}$
2. $50\% = \frac{50}{100} = \frac{50 \cdot 1}{50 \cdot 2} = \frac{1}{2}$
3. $25\% = \frac{25}{100} = \frac{25 \cdot 1}{25 \cdot 4} = \frac{1}{4}$
4. $5\% = \frac{5}{100} = \frac{5 \cdot 1}{5 \cdot 20} = \frac{1}{20}$

Application Example

5. Your school's softball team won 30% of its games. Did the team win more than one-fourth of its games?

$30\% = \frac{3}{10}$ $\qquad \frac{3}{10} > \frac{1}{4}$

∴ Yes, the team won more than one-fourth of its games.

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Check your answers at BigIdeasMath.com.

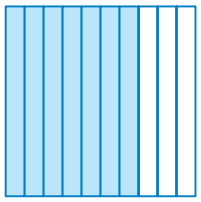
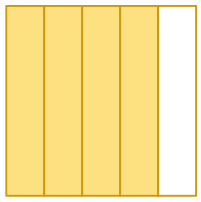
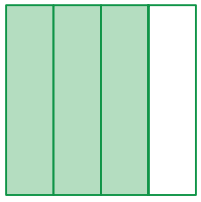
Write the percent as a fraction in simplest form.

6. 20% = _____
7. 45% = _____
8. 7% = _____
9. 32.5% = _____
10. 15% = _____
11. 1% = _____
12. 150% = _____
13. $33\frac{1}{3}\%$ = _____

Write the fraction as a percent.

14. $\frac{3}{20}$ = _____
15. $\frac{6}{5}$ = _____
16. $\frac{5}{8}$ = _____
17. $\frac{3}{5}$ = _____

Write the fraction represented by the model as a percent.

18.  _____
19.  _____
20.  _____

21. **SURVEY** Eighteen out of twenty people in a survey said that vanilla ice cream is their favorite flavor of ice cream. What percent is this? _____

22. **SPANISH LANGUAGE** Twelve of the 40 students in your class can speak Spanish. What percent is this? _____

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REVIEW: Percents and Decimals

Name _____

Key Concept and Vocabulary

$18\% = 0.18$

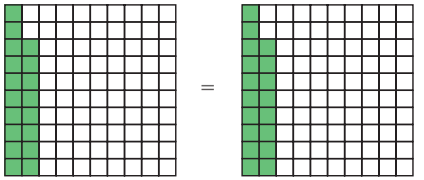
Percent to Decimal: Move decimal point to the left 2 places.

$0.73 = 73\%$

Decimal to Percent: Move decimal point to the right 2 places.

Visual Model

$18\% = 0.18$

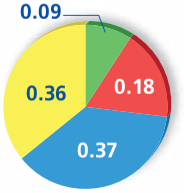


Skill Examples

1. $18\% = 0.18$
2. $145\% = 1.45$
3. $0.005 = 0.5\%$ *(one-half of one percent)*
4. $0.125 = 12.5\%$

Application Example

5. What percent of the circle graph is represented by the yellow region?



$0.36 = 36\%$

∴ The yellow region is 36%.

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Check your answers at BigIdeasMath.com.

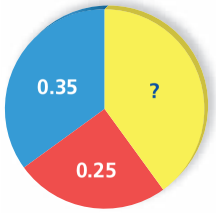
Write the percent as a decimal.

6. 20% = _____
7. 45% = _____
8. 7% = _____
9. 32.5% = _____
10. 15% = _____
11. 1% = _____
12. 150% = _____
13. 0.2% = _____

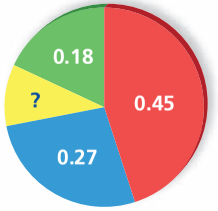
Write the decimal as a percent.

14. 0.13 = _____
15. 1.4 = _____
16. 0.001 = _____
17. 2.5 = _____

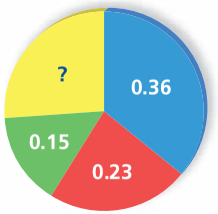
What percent of the circle graph is represented by the yellow region?

18. 

_____

19. 

_____

20. 

_____

21. **BUDGET** You have set aside two twenty-fifths of your monthly budget for clothing. What percent is this? _____

22. **SUMMER SCHOOL** Eighty-seven percent of the students in your class do not plan to attend summer school. What percent of your class plans to attend summer school? _____

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REVIEW: Finding the Percent of a Number

Name _____

Key Concept and Vocabulary

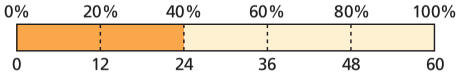
40% of 60 is 24.

$0.4 \times 60 = 24$

$\frac{2}{5} \times 60 = 24$

Write percent as decimal or fraction and multiply.

Visual Model



Skill Examples

1. 30% of 50: $0.3 \times 50 = 15$
2. 45% of 80: $0.45 \times 80 = 36$
3. 110% of 40: $1.1 \times 40 = 44$
4. 25% of 240: $0.25 \times 240 = 60$

Application Example

5. 28% of the 200 people who answered a survey own a dog. How many of the 200 people in the survey own a dog?

$0.28 \times 200 = 56$

∴ 56 of the 200 people own a dog.

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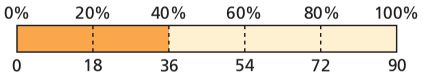
Check your answers at BigIdeasMath.com.

Find the percent of the number.

6. 25% of 40 = _____
7. 20% of 35 = _____
8. 65% of 110 = _____
9. 125% of 20 = _____
10. $33\frac{1}{3}$% of 60 = _____
11. 95% of 400 = _____
12. 200% of 31 = _____
13. 18% of 90 = _____
14. 1% of 800 = _____
15. 60% of 60 = _____
16. 100% of 59 = _____
17. 1000% of 59 = _____

Write the question represented by the model. Then answer the question.

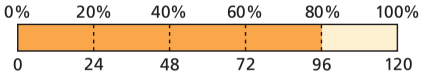
18.



Question: _____

Answer: _____

19.



Question: _____

Answer: _____

20. **ENDANGERED SPECIES** Sixty percent of a species of butterfly died due to loss of habitat. Originally, there were 10,000 butterflies. How many are left? _____

21. **SALES TAX** You buy 4 breakfast sandwiches at $2.59 each, 4 hashbrowns at $1.10 each, and 4 bottles of orange juice at $1.25 each. The sales tax is 6%. Find the total cost of the 4 meals, including sales tax. _____

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REVIEW: Comparing Percents

Name _____

Key Concept and Vocabulary

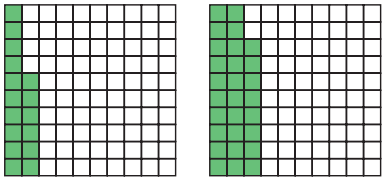
is less than: 16% < 28%

is greater than: 28% > 16%

inequality signs

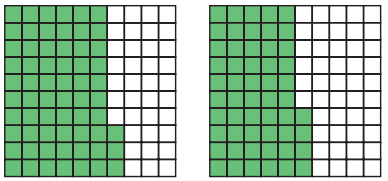
Visual Model

16% < 28%

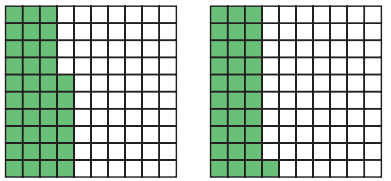


Skill Examples

1. 63% > 54%



2. 36% > 31%



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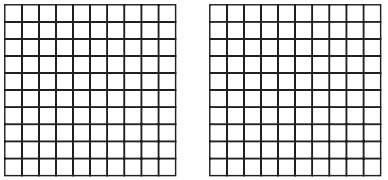
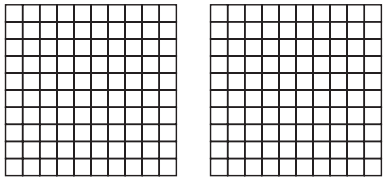
Check your answers at BigIdeasMath.com.

Shade the models to show the two percents. Then compare them using <, >, or =.

3. 47% ☐ 43%



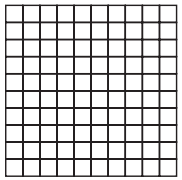
4. 81% ☐ 76%



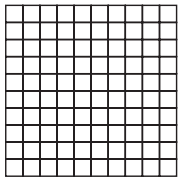
5. **FUNDRAISER** Two classrooms are having a fundraiser. After one week, Classroom A has raised 26% of its goal and Classroom B has raised 29% of its goal. Shade the models to show the two percents. Which classroom has raised a greater percentage of its goal?

_____

Classroom A



Classroom B



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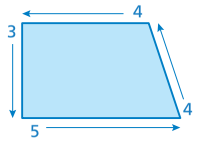
REVIEW: Perimeter

Name _____

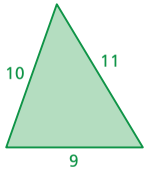
Key Concept and Vocabulary



Perimeter = 3 + 5 + 4 + 4 = 16

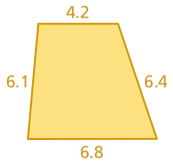
Visual Model

Perimeter = 10 + 9 + 11
= 30



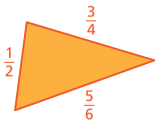
Skill Examples

1.



$P = 6.1 + 6.8 + 6.4 + 4.2$
$= 23.5$

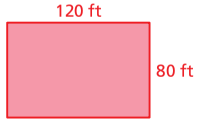
2.



$P = \frac{1}{2} + \frac{5}{6} + \frac{3}{4}$
$= \frac{25}{12}$

Application Example

3. Find the length of fence needed to enclose the lot.



$P = 2(80) + 2(120)$
$= 160 + 240$
$= 400$

∴ You need 400 feet of fence.

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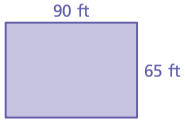
Check your answers at BigIdeasMath.com.

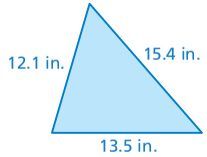
Find the perimeter of the figure.

4.



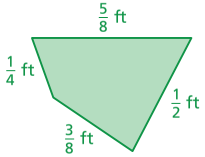
Perimeter = _____

5.



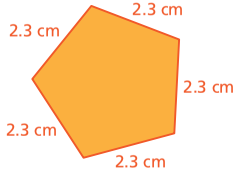
Perimeter = _____

6.



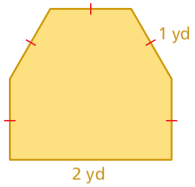
Perimeter = _____

7.



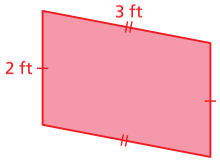
Perimeter = _____

8.



Perimeter = _____

9.



Perimeter = _____

10. RIBBON You are wrapping a ribbon around a rectangular box that is 18 inches long and 12 inches wide. What is the minimum amount of ribbon you need? _____

11. COUNTY LINE A county has the shape of a quadrilateral. The lengths of the four sides are 109 miles, 94 miles, 82 miles, and 109 miles. Find the perimeter of the county. _____

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REVIEW: Area

Name _____

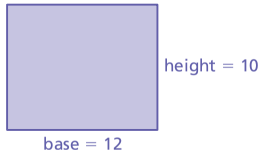
Key Concept and Vocabulary

Rectangle: $A = bh$
Parallelogram: $A = bh$
Triangle: $A = \frac{1}{2}bh$
Trapezoid: $A = \frac{1}{2}(B + b)h$

Visual Model

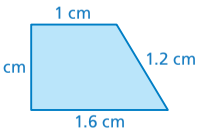
Area of a Rectangle:

$A = bh$
$= (12)(10)$
$= 120$ square units



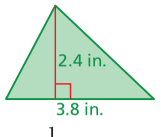
Skill Examples

1.



$A = \frac{1}{2}(1.6 + 1)(1)$
$= 1.3\ \text{cm}^2$

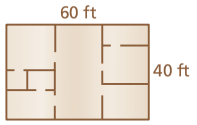
2.



$A = \frac{1}{2}(3.8)(2.4)$
$= 4.56\ \text{in.}^2$

Application Example

3. Find the area of the apartment.



$A = 60 \cdot 40$
$= 2400\ \text{ft}^2$

∴ The area is 2400 square feet.

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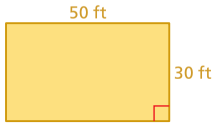
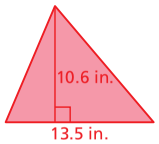
Find the area of the figure.

4.



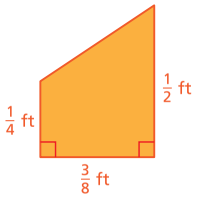
Area = _____

5.



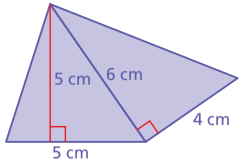
Area = _____

6.



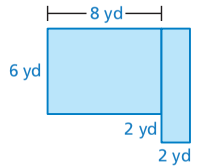
Area = _____

7.



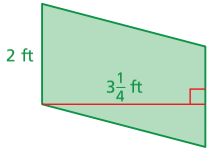
Area = _____

8.



Area = _____

9.



Area = _____

10. CARPET You are carpeting a rectangular room that is 3.5 yards by 4.5 yards. The carpet costs $15 per square yard. How much will it cost to carpet the room? _____

11. COLORADO Colorado is approximately a rectangle that is 280 miles by 380 miles. Is the area of Colorado greater than or less than 100,000 square miles? Explain.

_____

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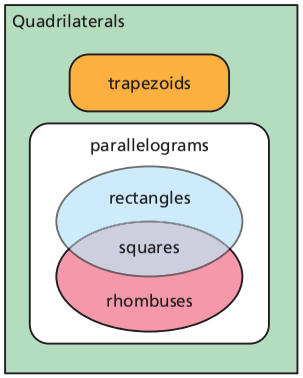
REVIEW: Quadrilaterals

Name _____

Key Concept and Vocabulary

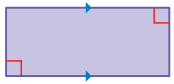
Quadrilateral	Diagram
A *trapezoid* has exactly 1 pair of parallel sides.	
A *parallelogram* has 2 pairs of parallel sides	
A *rectangle* is a parallelogram with 4 right angles.	
A *rhombus* is a parallelogram with 4 congruent sides.	
A *square* is a parallelogram with 4 right angles and 4 congruent sides.	

Visual Model



Skill Example

1. The quadrilateral has 4 right angles. The 4 sides are not congruent. The quadrilateral is a rectangle.



Application Example

2. The sum of the angle measures of a quadrilateral is 360°. Find the value of x in the rhombus.

$x + 110 + 70 + 110 = 360$

$x + 290 = 360$

$x = 70$

∴ The value of x is 70.

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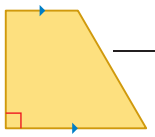
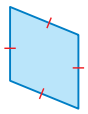
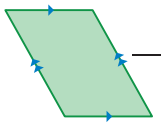
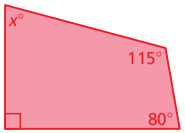
Classify the quadrilateral.

3.  _____

4.  _____

5.  _____

6. **ANGLE MEASURE** Find the value of x in the quadrilateral. _____



7. **RHOMBUS** A quadrilateral has 4 right angles. Can the quadrilateral be classified as a rhombus? Explain.

_____

_____

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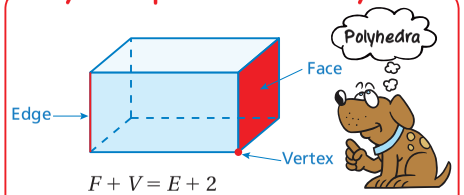
REVIEW: Faces, Edges, and Vertices

Name _____

Key Concept and Vocabulary



$F + V = E + 2$

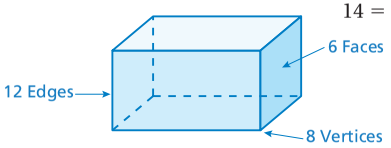
Visual Model

Rectangular Prism

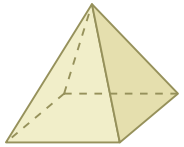
$F + V = E + 2$

$6 + 8 = 12 + 2$

$14 = 14$ ✓

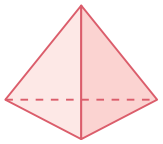


Skill Examples

1. 

$F + V = E + 2$

$5 + 5 = 8 + 2$

2. 

$F + V = E + 2$

$4 + 4 = 6 + 2$

Application Example

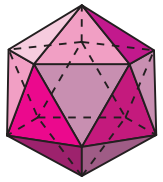
3. How many vertices does an icosahedron have?

$F + V = E + 2$

$20 + V = 30 + 2$

$V = 12$

∴ It has 12 vertices.



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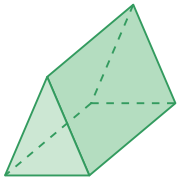
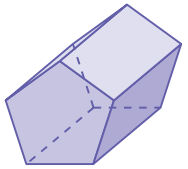
Find the number of faces, edges, and vertices.

4. Triangular Prism



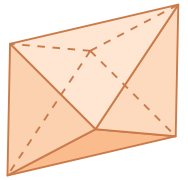
$F =$ ___, $E =$ ___, $V =$ ___

5. Pentagonal Prism



$F =$ ___, $E =$ ___, $V =$ ___

6. Octahedron



$F =$ ___, $E =$ ___, $V =$ ___

Find the missing number of faces, edges, or vertices.

7. Dodecahedron

$F = 12, E = 30, V =$ ___

8. Icosidodecahedron

$F =$ ___, $E = 60, V = 30$

9. Octagonal Prism

$F = 10, E =$ ___, $V = 16$

10. **SOCCER BALL** A soccer ball has the shape of a truncated icosahedron. It has 32 faces and 90 edges.

   a. How many vertices does it have? _____

   b. The vertices of an icosahedron are cut off to form the pentagons and hexagons seen on the soccer ball. How many of the faces are pentagons? _____

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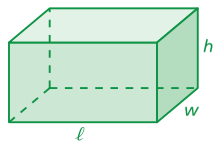
REVIEW: Surface Areas of Prisms

Name _____

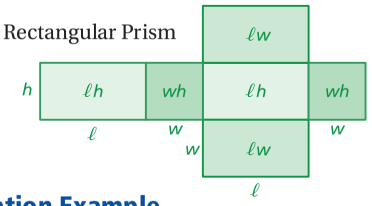
Key Concept and Vocabulary



$S = 2\ell w + 2\ell h + 2wh$

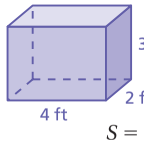
Visual Model

Net for a Rectangular Prism



Skill Example

1.



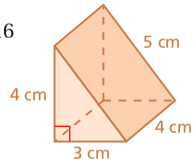
$S = 2(4 \cdot 2) + 2(4 \cdot 3) + 2(2 \cdot 3)$
$= 16 + 24 + 12$
$= 52 \text{ ft}^2$

Application Example

2. Find the surface area of the block.

$S = 2\left(\frac{1}{2} \cdot 3 \cdot 4\right) + 4 \cdot 5 + 3 \cdot 4 + 4 \cdot 4$
$= 12 + 20 + 12 + 16$
$= 60 \text{ cm}^2$

∴ The area is 60 cm^2.



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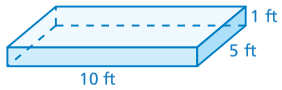
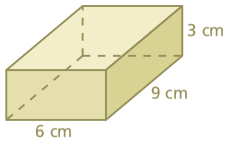
Find the surface area of the prism.

3. Rectangular Prism



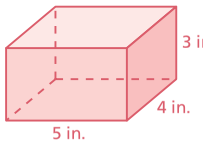
$S =$ _____

4. Rectangular Prism



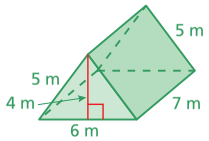
$S =$ _____

5. Rectangular Prism



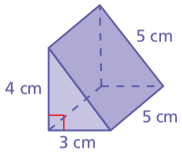
$S =$ _____

6. Triangular Prism



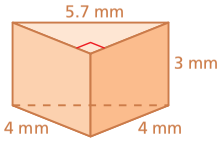
$S =$ _____

7. Triangular Prism



$S =$ _____

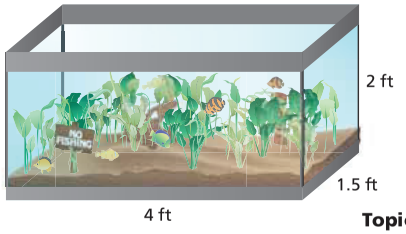
8. Triangular Prism



$S =$ _____

9. AQUARIUM How much glass is used to make the four sides of the aquarium? _____

10. AQUARIUM How much glass is used to make the base of the aquarium? _____



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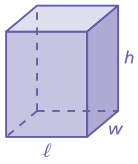
REVIEW: Volumes of Prisms

Name _____

Key Concept and Vocabulary



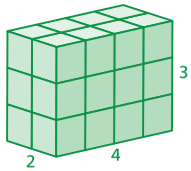
Base

$V = Bh$
$= \ell wh$

Visual Model

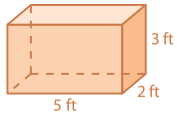
Volume of a Rectangular Prism

$V = 2 \cdot 4 \cdot 3$
$= 24 \text{ units}^3$



Skill Example

1.

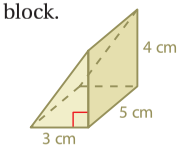


$V = 5 \cdot 2 \cdot 3$
$= 30 \text{ ft}^3$

Application Example

2. Find the volume of the block.

$V = Bh$
$= \left(\frac{1}{2} \cdot 3 \cdot 4\right) \cdot 5$
$= 30 \text{ cm}^3$



∴ The volume is 30 cubic centimeters.

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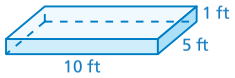
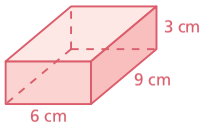
Find the volume of the prism.

3. Rectangular Prism



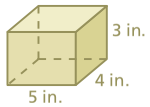
$V =$ _____

4. Rectangular Prism



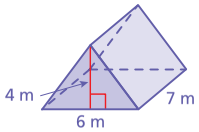
$V =$ _____

5. Rectangular Prism



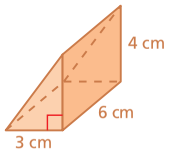
$V =$ _____

6. Triangular Prism



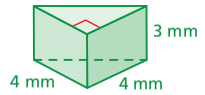
$V =$ _____

7. Triangular Prism



$V =$ _____

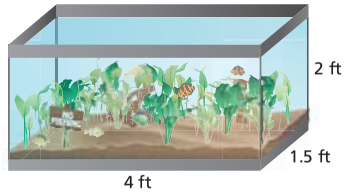
8. Triangular Prism



$V =$ _____

9. AQUARIUM How much water is needed to fill the aquarium? _____

10. AQUARIUM There are about 7.5 gallons in 1 cubic foot. How many gallons of water does the aquarium hold? _____



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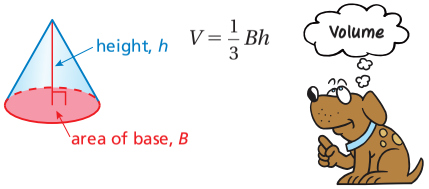
REVIEW: Volumes of Cones

Name _____

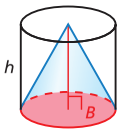
Key Concept and Vocabulary



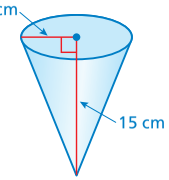
$V = \frac{1}{3}Bh$

Visual Model

The volume of a cone is *one-third* the volume of the cylinder that has the same base and height.



Skill Example

1. 

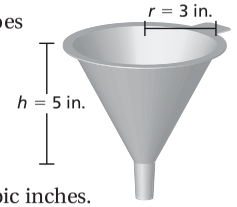
$V = \frac{1}{3}Bh$

$= \frac{1}{3} \cdot (\pi \cdot 6^2) \cdot 15$

$= 180\pi \text{ cm}^3$

Application Example

2. How much water does the funnel hold?



$V = \frac{1}{3} \cdot (\pi \cdot 3^2) \cdot 5$

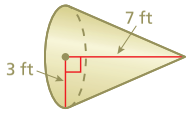
$= 15\pi \text{ in.}^3$

∴ It holds 15π cubic inches.

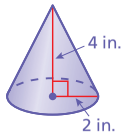
PRACTICE MAKES *PURR*-FECT™

Check your answers at BigIdeasMath.com.

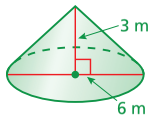
Find the volume of the cone.

3. 

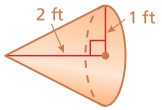
$V =$ _____

4. 

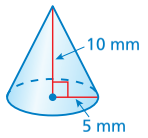
$V =$ _____

5. 

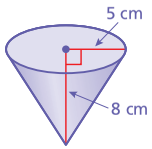
$V =$ _____

6. 

$V =$ _____

7. 

$V =$ _____

8. 

$V =$ _____

9. LEMONADE You have 10 gallons of lemonade (1 gal ≈ 3785 cm^3) How many of the paper cups should you order? Explain. _____

_____

_____

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REVIEW: Mean, Median, and Mode

Name _____

Key Concept and Vocabulary

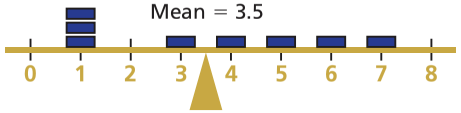
mode = 1 | median = 3.5

1, 1, 1, 3, 4, 5, 6, 7

$\text{Mean} = \frac{1+1+1+3+4+5+6+7}{8}$

$= 3.5$

Visual Model



The scale balances at the mean.

Skill Example

1. mode = 1 | median = 4

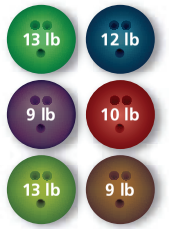
1, 1, 1, 3, 4, 5, 6, 7, 17 (Outlier)

$\text{Mean} = \frac{1+1+1+3+4+5+6+7+17}{9}$

$= 5$

Application Example

2. What is the mean weight of the bowling balls?



$13 + 12 + 9 + 10 + 13 + 9 = 66$

$\text{Mean} = \frac{66}{6} = 11$

∴ The mean is 11 pounds.

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Check your answers at BigIdeasMath.com.

Find the mean, median, and mode of the data.

3. 2, 6, 9, 10, 3, 4, 6, 12, 4, 13

Mean = ____, Median = ____, Mode = _____

4. 30, 48, 32, 43, 45, 32

Mean = ____, Median = ____, Mode = _____

5. 18, 12, 25, 18, 17, 19, 29, 20, 13, 18

Mean = ____, Median = ____, Mode = _____

6. 6.8, 6.2, 6.3, 6.8, 5.9, 6.0, 6.1, 5.9

Mean = ____, Median = ____, Mode = _____

7. −4, 5, 3, −2, 1, 0, −2

Mean = ____, Median = ____, Mode = _____

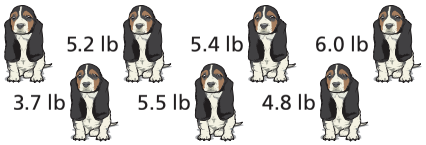
8. 2, 5, 5, 0, 12, 5, 7, 8, 12, 9

Mean = ____, Median = ____, Mode = _____

9. SALARIES The weekly salaries of six employees at a fast-food restaurant are $140, $220, $90, $180, $140, and $200. Find the mean, median, and mode of these salaries.

Mean = _____, Median = _____, Mode = _____

10. PUPPIES A litter of puppies is 8 weeks old. Find the mean, median, and mode weights of the puppies.



Mean = _____, Median = _____, Mode = _____

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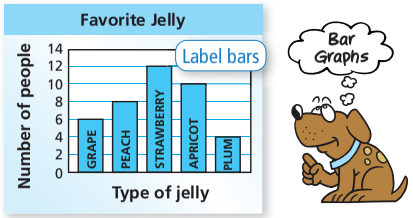
REVIEW: Bar Graphs

Name _____

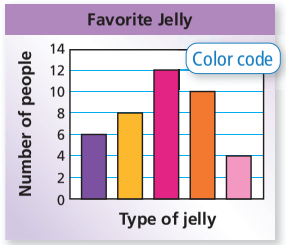
Key Concept and Vocabulary



Visual Model

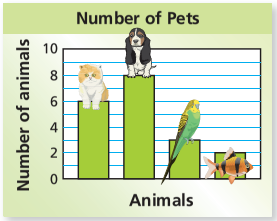
Favorite Jellies

- Grape 6
- Peach 8
- Strawberry 12
- Apricot 10
- Plum 4



Skill Example

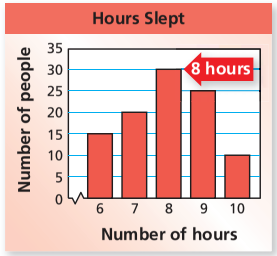
1. **Data**
   Cats 6
   Dogs 8
   Birds 3
   Fish 2



Application Example

2. How many people said they slept 8 hours a night?

∴ 30 people



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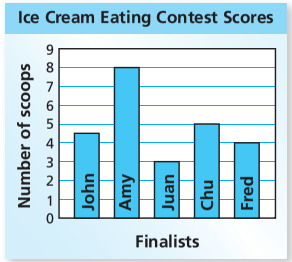
Check your answers at BigIdeasMath.com.

Draw a bar graph for the data. Label each part of the graph.

3. Hours Worked:
   Mon: 8, Tue: 7, Wed: 10, Thu: 10, Fri: 6

4. Hours Slept:
   Mon: 8, Tue: 7, Wed: 6, Thu: 9, Fri: 7

CONTEST **A class held an ice cream eating contest. The finalist scores are shown in the bar graph.**



5. How many scoops did John eat? _____
6. How many scoops did Amy eat? _____
7. How many scoops did Juan eat? _____
8. How many scoops did Chu eat? _____
9. How many scoops did Fred eat? _____

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REVIEW: Frequency Tables

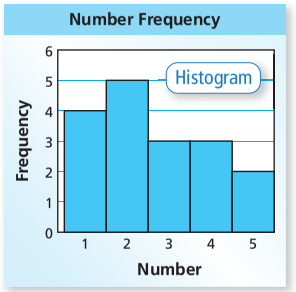
Name _____

Key Concept and Vocabulary

Number	Tally	Frequency
1	IIII	4
2	𝍸	5
3	III	3
4	III	3
5	II	2

Visual Model

A *histogram* shows the frequency of data values in intervals of the same size.



Skill Example

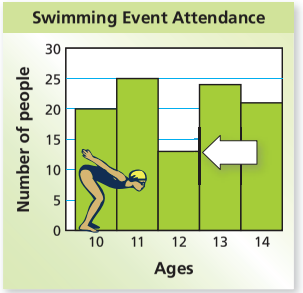
1. **Data:** 4, 6, 3, 6, 4, 5, 5, 6, 3, 5, 6, 3, 5, 6

Number	Tally	Frequency
3	III	3
4	II	2
5	IIII	4
6	𝍸	5

Application Example

2. How many 12-year-olds attended the swimming event?

∴ about 13



PRACTICE MAKES *PURR*-FECT™

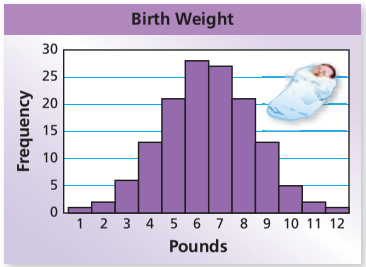
Check your answers at BigIdeasMath.com.

Make a frequency table for the data. Then draw a histogram for the data.

3. **Data (Ages)**
   5, 5, 7, 8, 4, 7, 5, 6, 7, 8, 4, 6, 6, 5, 7, 7, 6, 6, 7, 4, 8, 4, 6, 6, 5, 5, 7, 6

Number	Tally	Frequency
4		
5		
6		
7		
8		

BIRTH WEIGHT **The histogram shows the birth weights for babies at a hospital.**



4. How many babies weigh 6 pounds? _____
5. How many weigh 7 pounds? _____
6. How many weigh less than 6 pounds? _____
7. How many weigh 6 or more pounds? _____
8. Approximate the mean birth weight. _____

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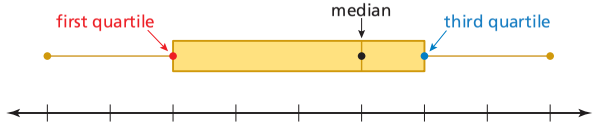
REVIEW: Identifying Outliers

Name _____

Key Concept and Vocabulary



interquartile range (IQR) = third quartile − first quartile

An outlier is any data value that is:

- less than first quartile − 1.5 × IQR
- greater than third quartile + 1.5 × IQR

Skill Example

1. lower half: 10 21 21 23 | upper half: 25 26 28 42

first quartile, 21 | third quartile, 27

IQR = 27 − 21 = 6

21 − 1.5 × 6 = 12 — Because 10 < 12, 10 is an outlier.

27 + 1.5 × 6 = 36 — Because 42 > 36, 42 is an outlier.

Application Example

2. The table shows the heights of seven students. Identify any outlier(s).

Height (in inches)						
52	47	55	81	61	49	59

Order the data: 47, 49, 52, 55, 59, 61, 81

IQR = 61 − 49 = 12

49 − 1.5 × 12 = 31 — 61 + 1.5 × 12 = 79

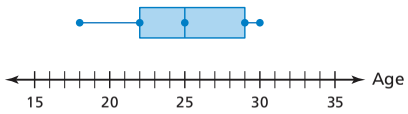
∴ Because 81 > 79, 81 is an outlier. There are no data values less than 31.

PRACTICE MAKES *PURR*-FECT™

Check your answers at BigIdeasMath.com.

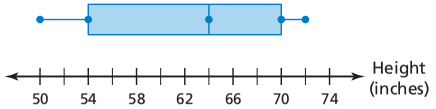
Find the interquartile range.

3.



_____

4.



_____

Identify any outlier(s) of the data set.

5. 8, 10, 13, 13, 14, 16, 27 _____

6. 20, 22, 22, 25, 28, 32, 34, 43 _____

7. 44, 51, 36, 19, 40, 69, 49, 46 _____

8. 76, 72, 64, 93, 80, 78, 96, 75, 70, 72 _____

9. **BASKETBALL** The table shows the free throw percentage of each player on a basketball team. Identify any outlier(s). _____

Free Throw Percentage			
75	72	54	69
82	51	74	76
79	85	75	84

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REVIEW: Evaluating Expressions

Name _____

Key Concept and Vocabulary

variable

Expression: $2x^2 + 3x - 6$

Evaluate when $x = 2$.

$2(2^2) + 3(2) - 6 = 8 + 6 - 6$

$= 8$

Visual Model

x	$2x + 3$	Value of Expression
1	2(1) + 3	5
2	2(2) + 3	7
3	2(3) + 3	9
4	2(4) + 3	11

Skill Examples

1. When $x = 5$, $3x + 4$ is $3(5) + 4 = 19$.

2. When $x = -1$, $5x + 7$ is $5(-1) + 7 = 2$.

3. When $x = 3$, $4x^2$ is $4(3^2) = 36$.

4. When $x = 4$, $x^3 + 1$ is $4^3 + 1 = 65$.

Application Example

5. For a Celsius temperature C the Fahrenheit temperature F is $\frac{9}{5}C + 32$. Find F when $C = 25°$.

$\frac{9}{5}C + 32 = \frac{9}{5}(25) + 32$

$= 45 + 32$

$= 77$

∴ The Fahrenheit temperature is 77°.

PRACTICE MAKES *PURR*-FECT™

Check your answers at BigIdeasMath.com.

Evaluate the expression.

6. When $x = 2$, $3x - 1 =$ _____.

7. When $x = -1$, $3x + 9 =$ _____.

8. When $x = 4$, $x^2 - 5 =$ _____.

9. When $x = \frac{1}{2}$, $3x^2 =$ _____.

10. When $x = 3.1$, $5x + 0.5 =$ _____.

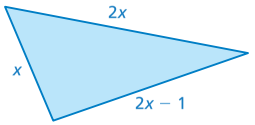
11. When $x = 0$, $4x^2 + 5 =$ _____.

12. When $x = 10$, $x^2 - 8x + 11 =$ _____.

13. When $x = 2\frac{1}{2}$, $6x + 3 =$ _____.

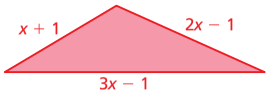
Evaluate the perimeter when $x = 3$.

14.



$P =$ _____

15.



$P =$ _____

16. **CARDINAL** The weight of the cardinal (in ounces) is $0.6x + 11$ after its eats x ounces of bird seed. How much does it weigh after it eats 2 ounces of bird seed? _____

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REVIEW: Writing Expressions and Equations

Name _____

Key Concept and Vocabulary

Phrase: Two more than a number

Expression: $2 + n$

Sentence: Two more than a number is equal to six.

Equation: $2 + n = 6$

Visual Model

$2 + n = 6$

Two | more than | a number | is equal to | six.

Skill Examples

1. Five times a number: $5n$
2. Six less than three times a number: $3n - 6$
3. The sum of a number and one: $n + 1$
4. A number divided by three: $n \div 3$

Application Example

5. Write an equation for the following. *"The price of \$15 is the wholesale cost plus a markup of fifty percent."*

   Let C be the wholesale cost.

   50% of C is $0.5C$.

   ∴ An equation is $15 = C + 0.5C$.

PRACTICE MAKES *PURR*-FECT™

Check your answers at BigIdeasMath.com.

Write the verbal phrase as a mathematical expression.

6. The product of a number and two

   _____

7. 10 subtracted from a number

   _____

8. 19 less than twice a number

   _____

9. The sum of a number and three, divided by four

   _____

10. Five times the sum of a number and two

    _____

11. Seven less than four times a number

    _____

Write the sentence as an equation.

12. Three times a number equals nine.

    _____

13. The difference of a number and nine is four.

    _____

14. Twelve divided by a number is four.

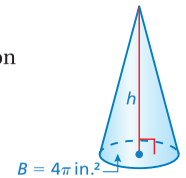
    _____

15. The sum of a number and seven is eighteen.

    _____

16. The volume of a cone is one-third the area of the base times the height. A cone has a volume of 20π cubic inches. Write an equation that can be used to solve for the height of the cone.

    _____



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REVIEW: Simplifyng Expressions

Name _____

Key Concept and Vocabulary

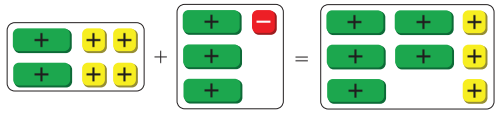
Combine variable terms.

$2x + 4 + 3x - 1 = 5x + 3$

Combine numerical terms.

Visual Model

Algebra Tiles



Skill Examples

1. $2x + 5x = 7x$
2. $1 + n + 4 = n + 5$
3. $(2x + 3) - (x + 2) = x + 1$
4. $2(y - 1) + 3(y + 2) = 5y + 4$

Application Example

5. The original cost of a shirt is x dollars. The shirt is on sale for 30% off. Write a simplifed expression for the sale cost.

   $x - 0.3x = 0.7x$

   ∴ The sale cost is $0.7x$.

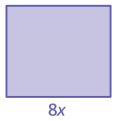
PRACTICE MAKES *PURR*-FECT™

Check your answers at BigIdeasMath.com.

Simplify the expression. ***(Remove parentheses and combine like terms.)***

6. $4x + 6x =$ _____
7. $3n + 5 - 2n =$ _____
8. $9x + 3 - 6x - 2 =$ _____
9. $3(x + 2) =$ _____
10. $7m - 2m + 5m =$ _____
11. $2 - (x + 1) =$ _____
12. $(3x + 6) - x =$ _____
13. $5 - (1 - n) =$ _____
14. $(x + 6) - (x + 6) =$ _____
15. $(4x - 2) + 3(x + 1) =$ _____
16. $(5x + 4) - 2(x + 1) =$ _____
17. $5(x + 2) - 2(x + 2) =$ _____

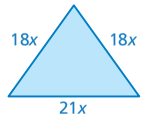
Write a simplified expression for the perimeter of the rectangle or triangle.

18. 

    Perimeter = _____

19.

    Perimeter = _____

20. 

    Perimeter = _____

21. The original cost of a cell phone is x dollars. The phone is on sale for 35% off. Write a simplified expression for the sale cost. _____

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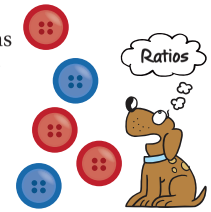
REVIEW: Ratios

Name _____

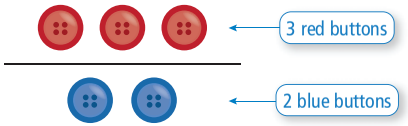
Key Concept and Vocabulary

The ratio of 3 red buttons to 2 blue buttons can be written in three ways:

$\frac{3}{2}$, 3 to 2, or 3 : 2



Visual Model



Skill Examples

1. Ratio of blue buttons to red buttons: $\frac{2}{3}$
2. Ratio of blue buttons to all buttons: $\frac{2}{5}$
3. Ratio of red buttons to all buttons: $\frac{3}{5}$

Application Example

4. Write the ratio of basketballs to soccer balls in three ways.

There are 4 basketballs.

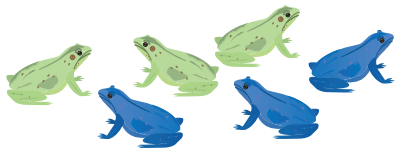
There are 5 soccer balls.

∴ $\frac{4}{5}$, 4 to 5, and 4 : 5

PRACTICE MAKES *PURR*-FECT™

Check your answers at BigIdeasMath.com.

Write the *simplified* ratio of green objects to blue objects in three ways.

5. 

_____

6.

_____

7.

_____

8.

_____

Write the simplified ratio of blue objects to *all* objects in three ways.

9. Frogs in Exercise 5

_____

10. Balloons in Exercise 6

_____

11. Cars in Exericise 7

_____

12. Flowers in Exercise 8

_____

13. **CLASS RATIO** The ratio of boys to girls in a class is 5 to 4. There are 12 girls in the class. How many boys are in the class? _____

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REVIEW: Rates

Name _____

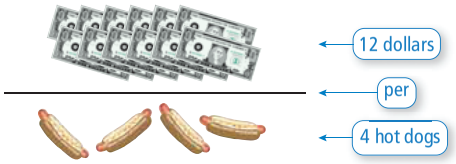
Key Concept and Vocabulary

You pay $12 for 4 hot dogs.

Rate = $\frac{\$12}{4 \text{ hot dogs}}$

Unit Rate = $\frac{\$3}{1 \text{ hot dog}}$

Visual Model



Skill Examples

1. You drive 100 miles in 2 hours.
   Your unit rate is 50 miles per hour.
2. You earn $40 in 5 hours.
   Your unit rate is $8 per hour.
3. You save $240 in 6 months.
   Your unit rate is $40 per month.

Application Example

4. Janice was 44 inches tall when she was 8 years old. She was 52 inches tall when she was 12 years old. What was her unit rate?

   She grew 8 inches in 4 years: $\frac{8}{4} = \frac{2}{1}$.

   ∴ Her unit rate is 2 inches per year.

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Check your answers at BigIdeasMath.com.

Write the unit rate in words and as a fraction for each situation.

5. You fly 2000 miles in 4 hours.
   Words _____ Fraction _____
6. You pay 15 dollars for 3 pizzas.
   Words _____ Fraction _____
7. You pay $4 sales tax on a $50 purchase.
   Words _____ Fraction _____
8. You earn $25 for mowing 5 lawns.
   Words _____ Fraction _____

Circle the name of the person with the greater unit rate.

9. Maria saves $50 in 4 months.
   Ralph saves $60 in 5 months.
10. John rides his bicycle 36 miles in 3 hours.
    Randy rides his bicycle 30 miles in 2.5 hours.
11. Kim earns $400 for working 40 hours.
    Sam earns $540 for working 45 hours.
12. Arlene scores 450 points on 5 tests.
    Jolene scores 180 points on 2 tests.

Convert the unit rate.

13. $\frac{60 \text{ miles}}{1 \text{ hour}} = \frac{\square \text{ feet}}{1 \text{ second}}$
14. $\frac{2 \text{ gallons}}{1 \text{ hour}} = \frac{\square \text{ cups}}{1 \text{ minute}}$

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REVIEW: Proportions

Name _____

Key Concept and Vocabulary

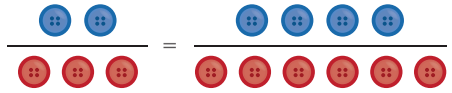
Proportion: "2 is to 3 as 4 is to 6."

$\frac{2}{3} = \frac{4}{6}$

$2 \cdot 6 = 3 \cdot 4$ ← Cross products are equal.

Visual Model

The ratio "2 to 3" is equal to the ratio "4 to 6."



Skill Examples

1. $\frac{3}{5} = \frac{12}{20}$ is a proportion because the cross products are equal.
2. $\frac{1}{7} = \frac{7}{48}$ is *not* a proportion because the cross products are not equal.
3. $\frac{10}{2} = \frac{5}{1}$ is a proportion because the cross products are equal.

Application Example

4. You spend \$5 for 3 tennis balls. Your friend spends \$6.25 for 4 tennis balls. Are the two rates proportional?

$\frac{\$5}{3 \text{ balls}} \stackrel{?}{=} \frac{\$6.25}{4 \text{ balls}}$ $5(4) \neq 3(6.25)$

∴ The rates are *not* proportional.

PRACTICE MAKES *PURR*-FECT™

Check your answers at BigIdeasMath.com.

Decide whether the statement is a proportion.

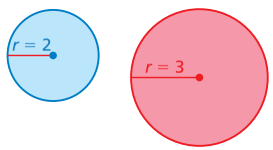
5. $\frac{3}{7} = \frac{6}{14}$ _____
6. $\frac{1}{4} = \frac{4}{1}$ _____
7. $\frac{3}{2} = \frac{9}{4}$ _____
8. $\frac{1.25}{3} = \frac{5}{12}$ _____
9. $\frac{6}{18} = \frac{120}{360}$ _____
10. $\frac{4}{5} = \frac{4+4}{5+5}$ _____

Complete the proportion.

11. $\frac{2}{5} = \frac{\square}{10}$
12. $\frac{1}{6} = \frac{4}{\square}$
13. $\frac{3}{\square} = \frac{9}{24}$

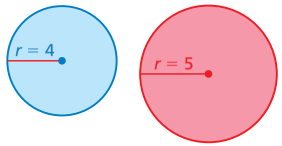
Write the proportion that compares the circumference to the radii of the two circles.

14.



_____

15.



_____

16. **COMPARING RATES** You spend \$20 for 5 T-shirts. Your friend spends \$15 for 3 T-shirts. Are the two rates proportional? _____

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REVIEW: Linear Patterns

Name _____

Key Concept and Vocabulary

Equation: $y = 2x + 3$

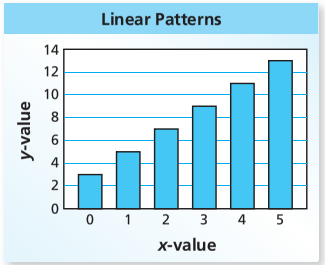
Table:

x	0	1	2	3	4	5
y	3	5	7	9	11	13

Words: Each time x increases by 1, y increases by 2.

Visual Model

Moving to the right, each bar increases by 2 units.



Skill Example

1. **Equation:** $y = 15 - 3x$

Table:

x	0	1	2	3	4	5
y	15	12	9	6	3	0

Words: Each time x increases by 1, y *decreases* by 3.

Application Example

2. The equation $P = 5t$ describes how much pay P you earn for working t hours. Make a table and describe the pattern.

t	1	2	3	4	5	6
P	5	10	15	20	25	30

∴ You get paid \$5 an hour.

PRACTICE MAKES *PURR*-FECT™

Check your answers at BigIdeasMath.com.

Complete the table. Then describe the pattern.

3. $y = x + 7$

x	0	1	2	3	4	5
y						

_____

4. $y = 9 - x$

x	0	1	2	3	4	5
y						

_____

5. $y = 4x + 5$

x	0	1	2	3	4	5
y						

_____

6. $y = 90 - 6x$

x	0	1	2	3	4	5
y						

_____

Write an equation for the pattern.

7.

x	0	1	2	3	4	5
y	5	14	23	32	41	50

_____

8.

x	0	1	2	3	4	5
y	50	40	30	20	10	0

_____

9. **HOURLY PAY** The equation $P = 7t$ describes how much pay P you earn for working t hours. Describe the pattern. _____

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REVIEW: Function Rules

Name _____

Key Concept and Vocabulary

Function Rule: $y = 2x + 4$

output input

Words: Double the value of x and add 4 to get the value of y.

Visual Model

You can see how x and y compare by making an Input-Output table.

Function Rule: $y = 2x + 4$

Input, x	0	1	2	3	4	5
Output, y	4	6	8	10	12	14

Skill Example

1. **Equation:** $y = 20 - 4x$

Table:

Input, x	0	1	2	3	4	5
Output, y	20	16	12	8	4	0

Words: Multiply x by 4 and subtract from 20 to get the value of y.

Application Example

2. The equation $F = \frac{9}{5}C + 32$ describes how the Fahrenheit and Celsius scales relate. Describe this in words.

Input, C	0	5	10	15	20	25
Output, F	32	41	50	59	68	77

Multiply C by $\frac{9}{5}$ and add 32 to get F.

PRACTICE MAKES *PURR*-FECT™

Check your answers at BigIdeasMath.com.

Complete the table. Then describe the pattern.

3. $y = 2x + 6$

Input, x	0	1	2	3	4	5
Output, y						

_____

_____

4. $y = 16 - 2x$

Input, x	0	1	2	3	4	5
Output, y						

_____

_____

5. $y = 3x + 7$

Input, x	0	1	2	3	4	5
Output, y						

_____

_____

6. $y = 65 - 10x$

Input, x	0	1	2	3	4	5
Output, y						

_____

_____

UNIT CONVERSION **Complete the table and describe the function rule in words.**

7. Inches to Centimeters: $C = 2.54I$

Input, I	0	1	2	3	4	5
Output, C						

_____

8. Miles to Kilometers: $K = 1.6M$

Input, M	0	1	2	3	4	5
Output, K						

_____

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REVIEW: Direct Variation

Name _____

Key Concept and Vocabulary

y is directly proportional to x.

scale factor

$y = kx$

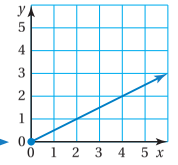
output input

Visual Model

For positive values of x and y, as x increases, y increases.

$y = \frac{1}{2}x$

through origin



Skill Example

1. **Equation:** $y = 2x$

Table:

x	0	1	2	3	4	5
y	0	2	4	6	8	10

Words: y is twice the value of x.

Application Example

2. The amount y of gasoline a car uses is $\frac{1}{20}$ times the number x of miles it travels. Make a table to show this relationship.

x	0	20	40	60	80	100
y	0	1	2	3	4	5

y is directly proportional to x.

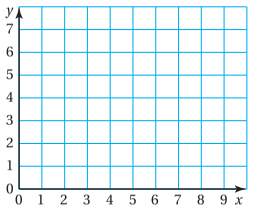
PRACTICE MAKES *PURR*-FECT™

Check your answers at BigIdeasMath.com.

Complete the table. Then sketch the graph.

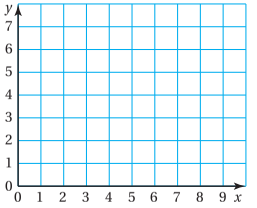
3. $y = 1.5x$

x	y
0	
1	
2	
3	
4	



4. $y = \frac{2}{3}x$

x	y
0	
1	
2	
3	
4	



WRITING AN EQUATION **Write a direct variation equation for the table.**

5.

x	0	1	2	3	4
y	0	3	6	9	12

_____

6.

x	0	1	2	3	4
y	0	0.4	0.8	1.2	1.6

_____

7. **WALRUS** The amount y that a walrus eats is directly proportional to its weight x. A 4000 pound walrus eats 20 pounds each day. How much does a 2000 pound walrus eat each day? _____

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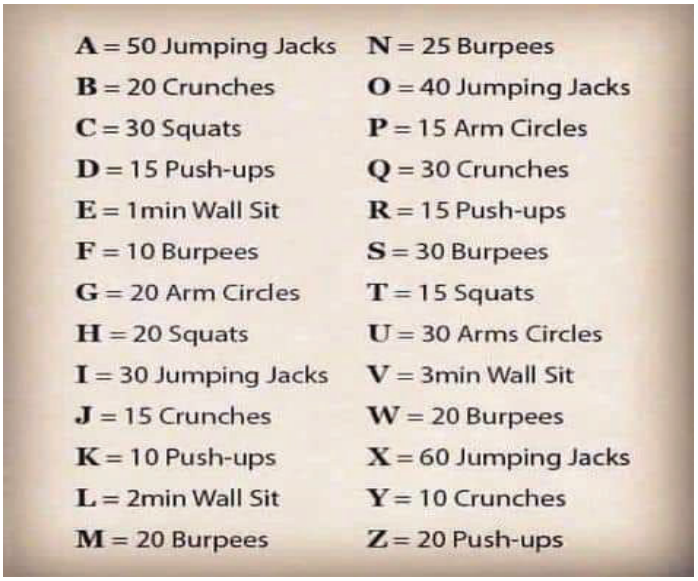
PE VOCABULARY WORK OUT!!!

Using the ABC work out chart… do the exercises that go along with the letters.

Example: BALL B- 20 crunches
A- 50 jumping jacks
L- 2 minute wall sit
L- 2 minute wall sit



Volleyball	Badminton	Health	Exercise	Baseball	Soccer	Nutrition
Basketball	Eclipse Ball	Wellness	Flexibility	Softball	Tennis	Workout
Football	Pickleball	Fitness	Endurance	Cardio	Strength	

******* if you have a device of your own… feel FREE to do some youTube workouts and log them. Here are a few youTube workout channels that we LOVE!!!************

POPSUGAR FITNESS **ZUMBA**

BEACH BODY FOR KIDS IS FREE **JUST DANCE**

Deck of Cards Fitness:

Objective: Collect as many cards as possible in a set time period

Rules:

1. Play by yourself or with as many people that you want to.
2. As a group choose 5 exercises that you would like to use for the game. (example: push ups, sit ups, jumping jacks and squats)
3. Keep the cards in a pile
4. The first person takes a card and does the exercise and the number of repetitions (example: a 6 of hearts=6 jumping jacks; face cards=12)
5. The next player immediately takes a card and does the exercise.
6. Once a player is finished they may grab another card.
7. Play continues until all the cards are gone or time is up (5-10 minutes)
8. Whoever has the most cards wins.

**Different variations of the game could be played...complete the exercise when you have doubles; double cards means double the exercise. Can also be done with 4 of a kind as well.

Cards 1-3 = push ups
Cards 5-8 = sit ups
Cards 9, 10, J = jumping jacks
Cards Q, K, A = squats

Fitness UNO card game

Using the same rules as the deck of cards game...Change it up and use different exercises!!!

Card 1 = Burpees
Card 2 = Jump twist
Card 5 = jumping jacks
Card 8 = ski jumps or slide jumps
Card +2 = draw 2 cards and do those exercises
Card + 4 = draw 4 cards and do the exercises
Skip card = skip around the room
Reverse card = jog backwards around the room
Wild card = 5 push ups

FLIP A COIN FITNESS

Flip a coin and complete the exercises that match. Make sure to do all 10 rounds.

	Heads	**Tails**
Round 1 (cardio)	:60 second jog in place	25 jumping jacks
Round 2 (lower body)	15 squats	25 calf raises
Round 3 (upper body)	20 kneeling push-ups	10 hand release push-ups
Round 4 (cardio)	30 mountain climbers	20 high knees
Round 5 (core)	35 scissor kicks	20 sit-ups
Round 6 (upper body)	20 tricep dips (can use chair)	40 punches
Round 7 (cardio)	12 burpees	15 jumping squats
Round 8 (core)	:60 second plank	15 Russian twists
Round 9 (lower body)	20 forward lunges	15 donkey kicks
Round 10 (cardo)	30 butt kicks	20 jumping jacks

CONNECT 4 FITNESS AT HOME

*Use a marker piece to claim a box.
*Complete the activity in the box
*Your opponent takes their turn
*Attempt to get 4 boxes in a row (horizontal, vertical, diagonal) anywhere on the board.
*You win when you have 4 boxes in a row!

10 burpees	2 run laps around house	20 arm circles	20 shoulder slappers	20 flutter kicks	20 Front to back jumps	10 situps
20 jumping Jacks	15 count straight leg stretch	10 star jumpers	20 karate side kicks	20 High leg kicks	15 crab (belly up) pushups	20 Favorite dance moves
10 count superman	20 high knees	20 Rope jumps with or without rope	20 mountain climbers	2 skipping Laps around house	10 pushups	10 hops on each leg
20 crab kicks	20 bicycles	1 carioca lap around house	20 Up and down on stairs	20 squats	25 feet criss crosses	20 plank knee touches
15 Air punches	1 shuffle lap	20 windmill toe touches	15 walking lunges	15 frog jumps	20 side to side jumps	20 count plank hold
20 Cross country skiers	20 count wall sit	20 bear walks	15 V-up toe touches	10 pushup jacks	15 heel raises	15 pogo jumps

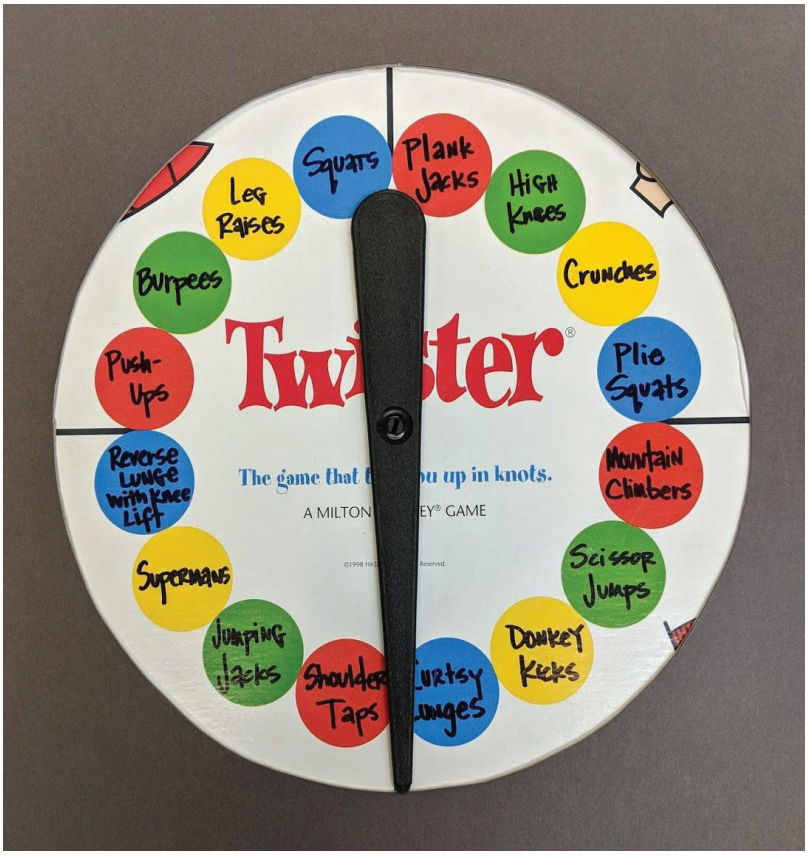
TWISTER FITNESS

*One person rolls 2-3 dice (or pick 3 pieces of paper from a cup - write #s 1-6 on the slips of paper like you would find on a dice)

*One person spins the twister wheel.

*All players perform the exercise spun based on the number rolled.

*Every 3 spins = a jog around the house/room OR jog in place for 30 seconds.



In 100 seconds, I can...

Do _____ sit ups.	Complete _____ push-ups.
Jump on your right foot _____ times.	Jump on your left foot _____ times.
Do _____ bell jumps.	Take _____ steps.
Do _____ scissor jumps.	Do _____ jumping jacks.
Do _____ ski jumps.	Do _____ wall jumps.

THE

NAME

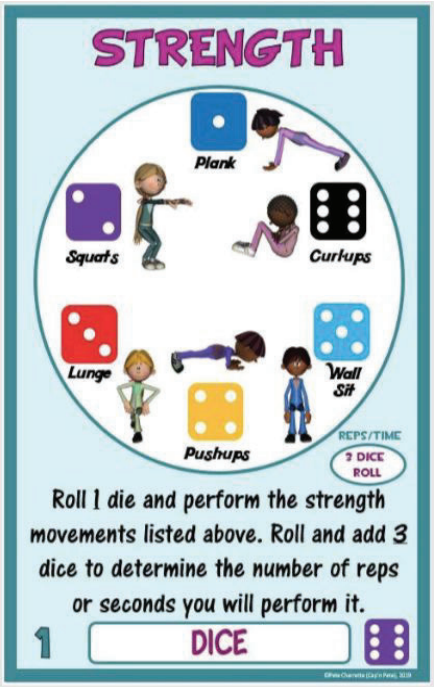
WORKOUT CHALLENGE

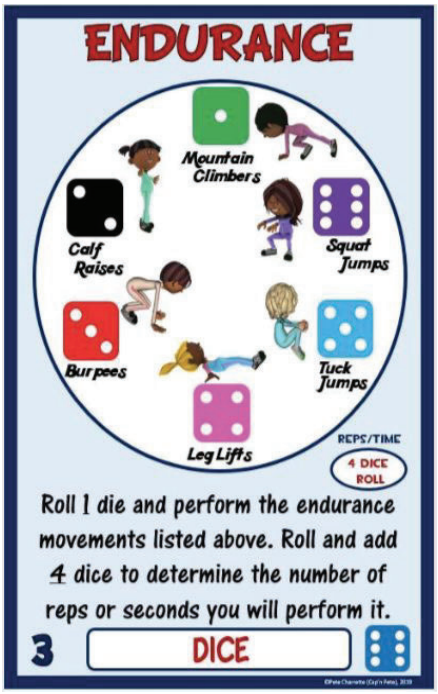
Spell your name to
Make a workout

A - 10 burpees	**J** - 10 tricep dips	**S** - 15 sumo squats
B - 1 minute plank	**K** - 20 push-ups	**T** - 15 burpees
C - 20 high knees	**L** - 1-minute wall sit	**U** - 20 jumping jacks
D - 10 mountain climbers	**M** - 15 squats	**V** - 30 high knees
E - 15 lunges	**N** - 20 burpees	**X** - 2-minute wall sit
F - 20 crunches	**O** - 15 push-ups	**Y** - 15 crunches
G - 30 second raised-leg plank (each leg)	**P** - 10 jump squats	**Z** - 20 burpees
H - 20 mountain climbers	**Q** - 30 second side plank (each side)	
I - 15 squats	**R** - 45-second wall sit	

DICE exercise

If you don't have a die, get 6 scraps of paper and put the numbers 1-6 on them. Then pull them out of a cup!





PE BINGO

**Use a marker piece to mark off the items you completed!

**Challenge someone to play with you (even if they aren't in your house)

**Attempt to get a Bingo in 1 day (or before lunch) - you can set the time limit with whoever you are challenging!

**If playing by yourself, have your parents set the time limit you are aiming for!

10 pushups (X3)	Eat healthy snack	Find a line on the ground and pretend it's a tightrope	Go outside and play for 30 minutes	Skip to the end of your driveway and back
Turn on some music & dance	Run in place (or somewhere safe) for 5 minutes	Hold a plank for 1 minute	Put together a puzzle	Write down 5 health goals I can accomplish by June
Balance on each leg for 30 seconds	Play a game of hopscotch with someone	Free Space	Drink 6-8 cups of water today	25 Jumping Jacks (X2)
Watch an online video about nutrition	3 Random Acts of Kindness	Do wall sits for 30 seconds (X2)	Make up a new game & teach it to someone	Help cook dinner for your family
Actively Stretch for 15 minutes	10 curlups (x3)	Write about your favorite PE game	Jump Rope for 5 minutes	Brush your teeth for 2 minutes

SHAPE Standards S1.E13, E16 & S5.E2

CATCH QUEST

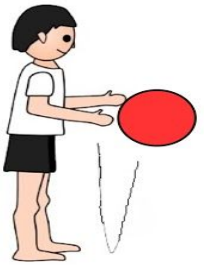
#1

CATCH A BALL WITH BOTH HANDS

#2

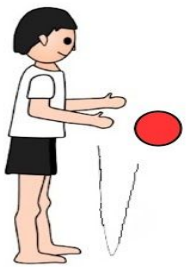
CATCH A BALL WITH ONE HAND

#3



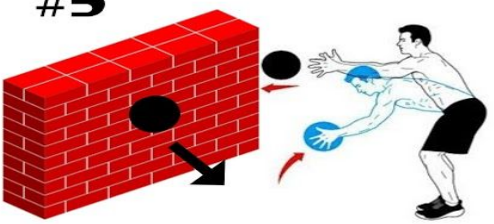
DROP AND CATCH A BALL WITH TWO HANDS

#4



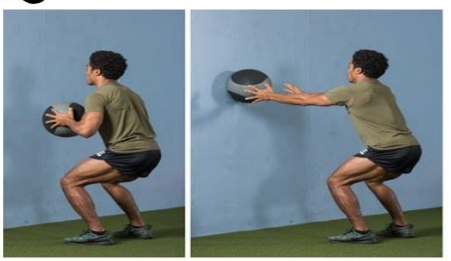
DROP AND CATCH A BALL WITH ONE HAND

#5



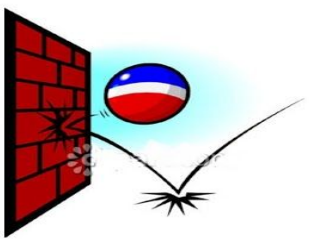
HIT WALL, LET BOUNCE, THEN CATCH

#6



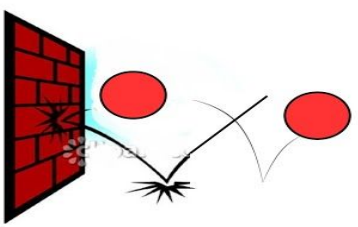
CATCH OFF WALL

#7



BOUNCE OFF FLOOR INTO WALL, THEN CATCH

#8



BOUNCE OFF FLOOR INTO WALL, LET BOUNCE, THEN CATCH

#9

TOSS AND CATCH BEHIND YOUR BACK

Only 1x

PROGRESSION: 5x 10x NEW OBJECT 5X 10x

Created by: Mike Ginicola @PhysEdDepot Inspiration from @RHEPE1

THE EXTRA MILE

DAREBEE WORKOUT

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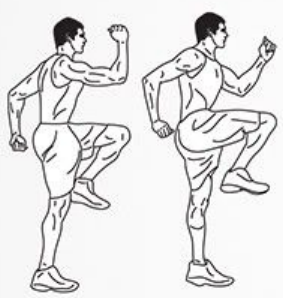
Level I 3 sets

Level II 5 sets

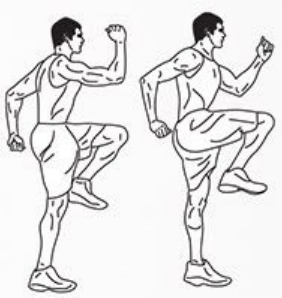
Level III 7 sets

2 minutes rest



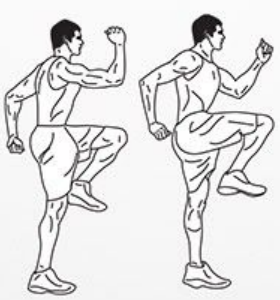
20 march steps

10 calf raises



20 march steps

20 butt kicks



20 march steps

20 high knees

Choir Tic Tac Toe

Week 1 & 2: Complete three activities each week

Write new lyrics to your favorite song	Interview someone at home about their favorite song (questionnaire attached)	Create an instrument out of stuff you find at home and explain to someone how it works
Create body percussion to a song you like	Your choice! Complete a musical activity of your own choosing: _____ _____	Read about Jazz on the attached document and answer the questions, then share what you learned with someone at home
Create a rhythm composition using found sounds at home (pots, chairs, cups, etc.)	Make a list of songs that would be a soundtrack for your life and explain why you picked each	Sing any song to someone at home; keep track of what you perform on the attached performance log

Choir Tic Tac Toe

Week 3 & 4: Complete three activities each week

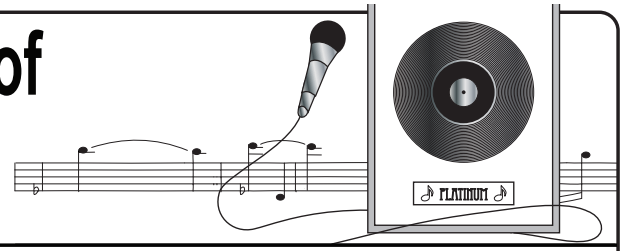
Find 3 things in your house that could be used as a musical instrument, then explain how they work to someone at home	Sing any song to someone at home; keep track of what you perform on the attached performance log	Choose your favorite choir piece from this year. Explain what it's about and why you like it.
Write a paragraph that explains what a song about peace and hope would sound like	Your choice! Complete a musical activity of your own choosing: _____ _____	Read about Hip Hop on the attached document and answer the questions, then share what you learned with someone at home
Create a rhythm accompaniment for a song you like and play it on a chair drum	Choose six songs to make a soundtrack for your life. Describe what each is about and why you chose that song.	Who is the best performer and why? Debate with someone in your house.

Choir Tic Tac Toe

Week 5 & 6: Complete three activities each week

Perform for yourself in the mirror.	Sing any song to someone at home; keep track of what you perform on the attached performance log	Teach someone at home how to stand and breathe for singing
Write a paragraph that explains what a song about war and anger would sound like	Your choice! Complete a musical activity of your own choosing: _____ _____	Read about Hip Hop on the attached document and answer the questions, then share what you learned with someone at home
Write lyrics to a song about anything	Teach someone at home to sing one of your choir pieces from this year	Sit quietly for five minutes and identify all of the sounds you hear. What would a song with these sounds be about? Share with someone at home.

The History of Hip Hop



Directions: Read the passage below and answer the questions that follow.

It is said that hip hop music was born at a birthday party in the Bronx, NY. This popular genre of music started out as party music in the 1970s. It was played by local DJs in the city neighborhoods.

DJs put different pieces of music together. They did this to make new sounds. Then, rapping was added. Rapping is a way of talking over the music with words that rhyme. DJs arranged the beats so that rappers could find a rhythm. Then, the rappers would speak in time with the beat. Rappers often wrote lyrics, or the words of a song, about their own lives.

At first, hip hop served as a response to disco. Disco was a dance music craze in the 1970s. Disco was all about wealth and status. Hip hop emphasized reality and community. Hip hop music and culture became helpful to musicians and listeners. It was a way for them to deal with the difficult things about city life.

Hip hop quickly became an artistic outlet for African Americans. It was a new way to tell stories. From there, hip hop evolved from just a type of music to an entire lifestyle.

Hip hop is an art form that continues to evolve and impact communities today. New artists and new sounds are brought into the genre. The new styles continue to become popular. Hip hop is a genre that is heard and enjoyed all over the world.

1. How are hip hop and disco related?_____

2. Why do you think hip hop is an important music genre for African Americans?_____

3. What are two things that make hip hop unique?_____

4. What is one notable fact about how hip hop music was created?_____

5. In your own words, write a definition for *rapping*._____

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Name _____ Date _____

Jazz Greats: Charlie Parker

Charlie Parker is one of the best-known names in saxophone jazz. He is considered by many to be the greatest jazz saxophonist in history.

Parker was born in 1920 in Kansas City, Missouri. He began playing the saxophone at the age of 11. He said once in an interview that, during his early career, he practiced 15 hours a day for three or four years. In 1939, he moved to New York. At first, he supported himself as a dishwasher, making $9 a week. Then, in 1942, Parker met Dizzy Gillespie, a jazz trumpeter. The two would later become a famous duo.

Parker played with a talented group of young musicians, such as Gillespie and Thelonious Monk, in Harlem after-hours clubs. In 1939, he hit upon a new method of playing, one that would lead him to become one of the creators of bebop, a new form of jazz. Some classic jazz musicians rejected the new sound, but others embraced it, playing jam sessions with the young beboppers and learning their ways.

Parker was a great innovator and created many new musical techniques. A fusion of jazz and classical music that Bird worked on with the string section of a chamber orchestra resulted in the album Charlie Parker with Strings, which was so popular, he recorded a second, longer album of the same name. Parker also created a unique version of the 12-bar blues that he used in his song "Blues for Alice." Many of Parker's innovations are still used by jazz musicians today.

Directions: Answer the questions below. Use text evidence to support your answers.

1. What is the main idea of Jazz Greats: Charlie Parker? Write it in your own words.

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Name _____ Date _____

Jazz Greats: Charlie Parker

2. Choose a quote from the text that supports the following statement, and record it on the lines below.

   Charlie Parker worked hard during his early career.

_____

_____

3. Why did Charlie Parker create a second album named *Charlie Parker with Strings*?

_____

_____

4. Describe what the author means when the text says, "Some classic jazz musicians rejected the new sound, but others embraced it..."

_____

_____

5. What was the result of Charlie Parker's experience playing with a talented group of young musicians in Harlem after-hours clubs?

_____

_____

6. One of Charlie Parker's nicknames is Bird. Why do you think this nickname was chosen for him?

_____

_____

7. What evidence in the passage shows that Parker was influential in jazz music? Include two pieces of evidence.

   a. _____

   _____

   b. _____

   _____

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Middle School Band

Choice Board

Complete two activities per week.

Practice for 20 minutes.	Learn to play Ode to Joy by ear.	Write your own eight-measure rhythm on the back of this sheet.	Teach a family member how to hold your instrument.	Teach a family member how to read the notes on the music staff.
Learn a new scale from your book.	Practice for 10 minutes.	Learn to play Happy Birthday by ear.	Compose your own song using different rhythm patterns.	Perform for yourself in the mirror.
Write and perform your own song.	Play as many songs from the book that you can in 15 minutes.		Practice for 15 minutes.	Play your instrument for your pet for 10 minutes.
Use items around your home to create your own instrument.	Create a rhythm composition using found sounds at home (pots, chairs, cups, etc.)	Create your own body percussion patterns to a song you like.	Pick three songs from your book and play a concert for your family.	Play the Bb major scale five times.
Listen to a song and write a story that fits the music.	Hum one of your favorite songs we've worked on this year.	Practice keeping a steady beat to some of your favorite music.	Create rhythms while listening to music.	Teach a family member how to care for your instrument.

Middle School Orchestra

Choice Board

Complete two activities per week.

Practice for 20 minutes.	Learn to play Ode to Joy by ear.	Write your own eight-measure rhythm on the back of this sheet.	Teach a family member how to hold your instrument.	Teach a family member how to pizzicato.
Teach a family member how to hold the bow.	Practice for 10 minutes.	Learn to play Happy Birthday by ear.	Compose your own song using different rhythm patterns.	Perform for yourself in the mirror.
Write and perform your own song on the D and A string.	Play as many songs from the book that you can in 15 minutes.		Practice for 15 minutes.	Play your instrument for your pet for 10 minutes.
Use items around your home to create your own instrument.	Create a rhythm composition using found sounds at home (pots, chairs, cups, etc.)	Create your own body percussion patterns to a song you like.	Pick three songs from your book and play a concert for your family.	Play the D major scale five times.
Listen to a song and write a story that fits the music.	Hum one of your favorite songs we've worked on this year.	Practice keeping a steady beat to some of your favorite music.	Create rhythms while listening to music.	Teach a family member how to care for your instrument.

Theatre Tic Tac Toe

Choose two activities to complete each week.

Teach someone at home a game from theatre and play for ten minutes	Create a puppet out of things you find in your house, then write a story for that puppet.	Choose two fictional prompts to complete. For extra fun, act them out with someone at home.
Find an object in your house and see how many ways you can use it as a prop (a pen might be a drumstick or a microphone) Be creative!	Sit for 5 minutes and write down every sound you hear. If these sounds were a song, what would it be about? Why?	Rewrite the ending to your favorite movie
Have a conversation with someone entirely through facial expressions, then write what you think it was about	Complete the Create Your Own Superhero Activity	Practice being someone at home's mirror, then switch and repeat. See how creative you can get with your actions!

Theatre Tic Tac Toe

Choose two activities to complete each week!

Teach someone at home a theatre game and play for ten minutes	If COVID-19 was a musical, what would the songs be? Describe your choices and why you picked those songs.	Choose two fictional prompts to complete. For extra fun, act them out with someone at home.
Read a book to your pet or someone at home and act out all of the characters.	Think about your favorite movie or TV show, then write two monologues: one that convinces people that show is the best, and one that convinces them it's the worst. Act it out for fun!	Make a costume out of things you find at home, then describe your character and why you chose those items as part of your costume.
Communicate with someone at home only in gestures for five minutes, then write out the conversation as you perceived it.	Complete the Finish the Thought activity	Create a poster to advertise a play about the world's current events. Include the title, location, time, and appropriate art design.

Blocking

Blocking is... the planning out of the physical action of actors on stage

At some point you will need to block a piece of theatre, whether it's blocking yourself in a monologue, working in pairs for a scene, or perhaps you'll direct or stage manage a play.

Blocking is an important part of the theatrical action, otherwise actors merely stand on stage and spout their lines. How an actor moves, where they move and when they move must be taken into consideration.

Origins of the word "blocking"

In the 19th century, directors often used blocks of wood to represent actors as they planned the movement.

Blocking Tips

- **Blocking should be character-driven** – never have actors move, sit, or stand simply "because." Look at what the character is trying to achieve in the moment. Look at the emotions they are trying to convey or hide and use them to promote the physical action of the character.
- **Blocking should employ a variety of levels.** High, medium, low, jump, sit, lie on the floor.
- **Blocking should employ a variety of pace.** There are many different ways to move about a space: creep, run, slide, crawl, shuffle, glide.
- **Avoid straight lines in your blocking.** Lines are flat on stage. Shapes are dynamic. Think of triangles instead of lines. Always think of the picture being presented to an audience.

Blocking Shorthand

There is a standard shorthand for marking blocking notation on a script:

Stage Right	SR	Go Down Stairs	
Stage Left	SL	Go Up Stairs	
Upstage	US	Sit	
Centre Stage	CS	Stand (Rise)	
Down Stage	DS	Cross Above (Behind)	
Cross	X	Cross Below (In front of)	
Upstage Right	USR	Turn	
Upstage Left	USL	Lie Down	
Downstage Right	DSR	Lean	
Downstage Left	DSL	Jump Up	
Enter	En	Look At	
Exit	Ex	On top of	
Offstage	OS	Stop	
Pick Up	P/U	Chair	
Put Down	P/D	Table	
Kneel	Kn	Push	

Blocking Response Sheet

Use the back if necessary.

Name:_____

Make blocking notation on this monologue using the shorthand found on the previous page. Use the following criteria:

- A defined blocking action at the beginning and the end of the monologue.
- A blocking action based on an emotion.
- Block two different levels and two different paces.

DUNNO from *Tick Talk* by Lindsay Price

I don't know. I don't know. I don't know. I don't know anything. I don't know what I want to be or what do. I don't know why my parents hate me. Everyone hates me. I hate me and I hate that I hate me. I've got a hurt like a fist in my chest and it never goes away. Every morning I wake up and it's there and I don't know what to do about it. Everything is pushing in, and pushing in and I wake up and the hurt in my chest and I can't breathe. And if I don't do something to get this hurt out of my chest.... When do I know what I want? When am I going to be able to explain myself, or be myself without it being wrong? I don't know what's wrong with me. Why does everyone think there's something wrong with me? Why? Why? Why?

Write a paragraph on why you chose the actions and how they are character-driven.

Fictional Prompts Response Sheet **Name:**_____

Use the back if necessary.

1. Write a monologue that takes place on the first night of the zombie apocalypse.
2. Write a scene where two enemies are stuck in an elevator.
3. Write a scene between a person and their inner voice. The inner voice does not think much of the person.
4. Write a monologue in which the character reveals a childhood moment that changed their life.
5. Write a scene between a boyfriend and girlfriend. The girl is mad at the boy, but she can never say the words "I'm mad at you" in the scene.
6. Write a scene between two aliens preparing for the invasion of earth.
7. Write a scene that represents a teen's nightmare the night before an exam that will determine their future.
8. Write a scene between a teen and their 60-year-old self.
9. Write a monologue in which a girl has to convince her brother to lie for her.
10. Write a monologue in which a boy has to convince his sister not to run away.
11. Write a scene that involves a mild mannered accountant, except when it comes to his favourite hobby.
12. Write a scene between a girlfriend and boyfriend. The boy doesn't like that the girl is a bigger football fan than he is.
13. Write a monologue from the perspective of a food item in the refrigerator. What's life like in the fridge? Give the food a defined emotional state in the monologue.
14. Write a scene between two characters who meet for the first time. During the scene they find out they have something in common.
15. Write a scene between two characters at a bus stop. They have stood together at that bus stop every day for three months and today, one decides to talk to the other. It's a big mistake.

Theatrefolk
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Crystal Beach, ON, L0S 1B0, Canada
1-866-245-9138
www.theatrefolk.com

Prepared Exclusively For: Billy Brame - Arrowhead Middle School

Create Your Own Superhero

Here's What To Do

1. Answer the following questions and create your own Superhero.
2. Based on your answers come up with a 1 minute presentation.
3. Hand in your written work at the end of class.
4. You will be presenting your Superhero in the next class.

The Superhero Questionnaire…

1. **The basics:** Human Name, Age, Job (or school grade), favourite food, least favourite food, pet peeve, greatest strength, greatest weakness, and a secret (other than his/her concealed Superhero identity).
2. **The background:** Does your character come from a single parent household? Are they an only child? Orphan? Write five sentences on your character's family background. Who is your character's closest friend? Do they know your character is a superhero?
3. **Origin story:** When/how/why did your character become a superhero? How did they get their powers?
4. **Superhero basics:**
   a) **Name.** Why this name?
   b) **Power.** What can your character do?
   c) **Flaw.** Even Superman was allergic to kryptonite. Give your Superhero a flaw. NOTE: "No Flaw" is not acceptable, flaws are interesting!
   d) **Costume.** Why this costume? What does the costume do?
   e) **Prop.** Is it a car? A ring? A staff?
5. **Personal feelings:** How does your character feel about his/her powers? Like? Dislike? Lucky? Cursed? If your character could go back to being normal, would they? Why or why not?
6. **Outside feelings:** How does the city feel about your character? Trust or Distrust?
7. **In action:** Write down what happened the first time your character used their powers. Write down what happened the most recent time your character used their powers. How has your character changed from the first time to the most recent?

Superhero in Performance

Now that you've created the information for your character, prepare a one minute piece to present for the class. You know your Superhero inside-out. Take that into consideration during your presentation. How would your Superhero stand? Move? Talk? For your presentation think of the one thing your Superhero has to share with an audience. What's the one story that's on his/her mind?

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Finish the Thought Response Sheet **Name:**_____

Use the back if necessary.

Finish and respond to each Thought Starter with your own personal view and opinion.

1. I have always…
2. I remember…
3. It would be interesting if…
4. I have no problem with…
5. I try not to…
6. I have never…
7. I want…
8. I don't want…
9. I would like to…
10. Why does…
11. I hate…
12. I fear…
13. I love…
14. I wish…

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Art Prompts

(middle school)

Follow the drawing prompt for each day. Use the provided paper and whatever drawing materials you have available to draw the daily prompt; add color if you'd like. Take your time, be creative and have fun!

Week 1	1. Favorite animal 2. A cat with wings 3. Two animals turned into one 4. Create a new animal 5. Dinosaur
Week 2	1. Favorite Kansas City Team 2. Favorite place in Kansas City 3. Kansas state flower (sunflower) 4. KU or KState...or neither (choose another) 5. Your second favorite place in Kansas City
Week 3	1. Your family 2. Your bedroom 3. Your home 4. What is out your window 5. Your pet
Week 4	1. A person with donut eyes 2. Your teacher as a zombie 3. Yourself as a pirate 4. Your best friend as an alien 5. Yourself as a robot
Week 5	1. Favorite superhero 2. Favorite comic book character 3. Create your own comic book 4. Create a new villain 5. Superhero sidekick
Week 6	1. Apple + Banana = 2. Carrot + Shoe = 3. Pizza + Monster = 4. Spaghetti + Girl = (think hair) 5. Sandwich + Book =