



PLANNED INSTRUCTION LESSON MATERIALS

6th Grade

DUE DATE: FRIDAY, MAY 29TH

Please complete the following materials by the due date noted above.

Completed materials may be dropped off at the school (1006 West 10th Street) during food distribution Tuesdays and Fridays from 10:00am – 12:00noon, or turned in when the next week's materials are delivered to your home.

If you need assistance in completing the attached materials, please reach out to your classroom teacher via email, the school's website or Facebook page, or Class Dojo. You may also call the school directly Monday – Friday from 9:30-5:30 at 814-520-6468

Mrs. Veronica Will, Principal 814 873-5158

Mr. Aubrey Favors, Interim CEO 814 812-3026

Pizza Problems

Some experts question rewarding reading with pizza.

Should kids be reading for pizza? A nationwide reading program is drawing criticism for putting pizza front and center. Since 1985, the restaurant chain Pizza Hut has been running the *Book It* program, which rewards students for reading with personal pan pizzas. Now some people are taking a slice at *Book It*. They say the program promotes poor eating habits and gives Pizza Hut free advertising in public schools.



USDA.com

Everyone loves pizza, but should it be used as a reward for reading?

"It's clear that Pizza Hut's *Book It* has no place in public schools....It promotes junk food," says Susan Linn, a cofounder of the Campaign for a Commercial-Free Childhood. The group has called for schools to stop participating in the *Book It* program.

Nearly 22 million children in 50,000 U.S. schools take part in *Book It*. Since the program began, more than 200 million pizzas have been given away. Each year, from October 1 through March 31, students read books to meet monthly reading goals set by teachers. When students meet their goal for the month, they get a certificate for a personal pan pizza.

"We're really proud of the program," says Leslie Tubbs, the director of *Book It*. "We get hundreds of e-mails from [past participants] who praise it and say it helped them get started with reading." In 1988, President Ronald Reagan honored the program for promoting literacy, or reading skills.

But critics say schools can teach students to enjoy reading without the help of a fast-food company. "Schools need to realize that they are undermining their students' well-being," says nutrition expert Jane Levine. She explains that the *Book It* program is a problem not just because it rewards kids with fast food but also because it makes a large company a regular part of the school day.

campaign

cam · paign

Definition

noun

1. a set of planned actions carried out in order to make something happen.

Radio and television are part of this advertising campaign.

The candidate gave many speeches during his campaign for office.

verb

1. to follow a plan of action in order to achieve something in politics.

The candidate is campaigning for mayor.

Advanced Definition

noun

1. a military operation organized to achieve specific objectives.

He led a successful military campaign against the invaders.

Napoleon's campaign into Russia was a failure.

2. a systematic, concerted set of activities undertaken for a particular purpose.

We're launching a new advertising campaign for this product.

They're on a campaign to raise money for the Red Cross.

3. a political competition for elective public office.

Her campaign for governor was a great success.

intransitive verb

1. to be actively involved in a campaign.

Bill Clinton campaigned for president in 1996.

Spanish cognate

campaña: The Spanish word *campaña* means campaign.

These are some examples of how the word or forms of the word are used:

1. When she got to high school, Judy joined Virginia's youth-led **campaign** to fight tobacco use and promote healthy living, Y Street.
2. Thanks to a global vaccination **campaign**, smallpox was eradicated in 1979. It's the only disease ever to be wiped out by humans.
3. More than a million young people have signed up to join MTV's A Thin Line **campaign**, which aims to stop online bullying and encourages teens to speak out against it.
4. But he wasn't content to just sit back and let other kids suffer the way he had. He became a teen ambassador for Love Our Children USA's STOMP Out Bullying **campaign**.
5. One of the candidates in the spotlight was Senator Hillary Rodham Clinton, a Democrat from New York. "I'm in, and I'm in to win," the former first lady, wife of former President Bill Clinton, said at the start of her **campaign**.
6. The National PTA and Cartoon Network recently launched¹ a program called Rescuing Recess. To kick off the **campaign**, children across the country are being asked to write letters to let their local and state school officials know that recess is important to them.
7. In 1932, Franklin D. Roosevelt ran against Herbert Hoover, the president of the United States. Franklin remained determined, realistic, and optimistic. In his **campaign** speeches around the country, he promised to use all of the government's power to draw the country out of the depression.

promote

pro · mote

Definition

verb

1. to help something grow, increase, or move forward.

Eating well promotes health.

Their company advertises a lot to promote their products.

2. to move to a higher position.

The boss promoted Mr. Smith from clerk to supervisor.

Advanced Definition

transitive verb

1. to support the existence, growth, or advance of.

These toxic substances promote the growth of tumors.

Yoga promotes a sense of well-being.

They've launched a campaign to promote awareness of the dangers of alcohol.

2. to advance (someone) to a higher rank or position.

Because of his excellent job performance, he was promoted within the first year.

3. to advertise or otherwise encourage the purchase of.

The company is heavily promoting its newest product this month.

Spanish cognate

promover: The Spanish word *promover* means promote.

These are some examples of how the word or forms of the word are used:

1. Very few television ads **promote** healthful foods, such as fruits and vegetables.
 2. Another goal of these nontraditional activities is to **promote** lifelong fitness habits.
-

3. The goals of the new law are to **promote** good health and to combat obesity.
4. They say the program **promotes** poor eating habits and gives Pizza Hut free advertising in public schools.
5. In Florida, a high school student named Miranda Rosenberg started a Web site to **promote** the lowering of her state's voting age.
6. Banking on the need for portable drinking water and **promoting** the idea of fresher, cleaner water, the bottled water industry has created a huge market.
7. It's the official emblem of the Explorers Club, an international organization dedicated to **promoting** exploration worldwide. For over a century, they have helped lead the charge into the unknown.
8. Accepting the Nobel award for work in **promoting** peace was Muhammad Yunus and Grameen Bank. It might seem strange that someone would receive a peace prize for founding a bank. But Yunus is no ordinary banker.
9. Perhaps most importantly, they work to spread awareness about the endangerment of Asian elephants in that part of the world, encouraging tourists to act consciously when deciding which tourist camp or sanctuary to visit and **promote**.
10. "We might be demoting [Pluto] from the list of eight classical planets, but we're **promoting** it by making it the head of its own special class," says U.S. astronomer Owen Gingerich of Harvard University, who chaired the IAU panel.

Name: _____ Date: _____

1. How many U.S. schools take part in the *Book It* program?

- A. 200,000
- B. 50,000
- C. 200 million
- D. 22 million

2. The passage shows two sides of this debate: Should kids be reading for pizza? What is one argument in favor of the pizza reward program?

- A. The program rewards kids with fast food.
- B. The program gives a company free advertising.
- C. The program promotes reading skills.
- D. The program teaches students healthy habits.

3. After reading the passage, what can you conclude about the *Book It* program?

- A. Not everyone agrees that the program is a good idea.
- B. Kids who take part in the program will stop eating pizza.
- C. The program will start rewarding kids with fresh fruit.
- D. More schools will sign up for the program in the future.

4. Read this sentence from the passage:

"They say the program promotes poor eating habits and gives Pizza Hut free advertising in public schools."

In this sentence, the word **promotes** means

- A. quickly considers
- B. strongly agrees with
- C. actively encourages
- D. completely challenges

5. The primary purpose of this passage is to describe

- A. the importance of setting reading goals for children
- B. how pizza can be used to reward students for reading
- C. both sides of a debate about the *Book It* program
- D. why students need to learn healthy eating habits

6. Which president honored the reading program for promoting literacy?

7. How might nutrition expert Jane Levine feel if schools stopped participating in the *Book It* program? How do you know?

8. The question below is an incomplete sentence. Choose the word that best completes the sentence.

More than 200 million pizzas have been rewarded to students _____ the program began.

- A. since
- B. finally
- C. before
- D. about

Name: _____ Date: _____

1. The expression, "some people are taking a slice at *Book It*," means
 - A. people are supporting the *Book It* program.
 - B. parents are boycotting Pizza Hut.
 - C. people are criticizing the *Book It* program.
 - D. parents and children are enjoying pizza together.

2. People against *Book It* say that the program
 - A. encourages poor eating habits.
 - B. allows advertising of fast-food companies in schools.
 - C. makes fast food part of school.
 - D. all of the above.

3. Supporters of *Book It* say
 - A. the program encourages reading.
 - B. *Book It* encourages good eating habits.
 - C. the *Book It* program supports education.
 - D. all of the above.

4. Which of the following is *not* a fact about the *Book It* program?
 - A. If students meet their reading goal, they receive a free pizza.
 - B. President Regan honored the program for promoting literacy.
 - C. Kids are reading only because of the pizza.
 - D. Some nutrition experts feel the program is not healthy.

5. If your school participated in the Pizza Hut *Book It* program, how do you think it would affect your reading? Explain.

Blank Quiz

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* Required

How many U.S. schools take part in the Book It program? *

5 points

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5 points

"In this sentence, the word promotes means *

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East Africa has been a center of trade since ancient times. Throughout much of its history, East Africa has attracted people from many other continents.

Kingdoms and Trading States

How has the history of trade impacted the region?

Trade was important in the ancient kingdoms in East Africa. Contact between East Africa and other areas brought together people from different civilizations. Trade also resulted in the spread of Christianity and Islam into the region.

Ancient Nubia

The ancient region of Nubia was located in northeastern Africa, below ancient Egypt. The region stretched southward along the Nile River valley almost to what is now the Sudanese city of Khartoum. The region was bounded by the Libyan Desert in the west and by the Red Sea in the east. The Nile River was the pathway by which Nubia and the powerful empire of Egypt interacted.

In about 1050 B.C., a powerful civilization arose in Nubia. This was known as Kush. The Egyptians traded extensively with the Kushites, purchasing copper, gold, ivory, ebony, slaves, and cattle. The Kushites, in turn, adopted many Egyptian customs and practices. For example, they built pyramids to mark the tombs of their rulers and nobles.

During the final centuries of their civilization, the Kushites were isolated from Egypt. As a result, they turned increasingly to other African people south of the Sahara for trade and cultural contact. Around A.D. 350, Kush was conquered by Aksum, a powerful state in what is now northern Ethiopia.

Aksum

The date of Aksum's establishment is uncertain but it might have been around 1000 B.C. The people of Aksum derived their wealth and power primarily from trade. Aksum was strategically located, and it controlled the port city of Adulis on the Red Sea. At its height of power, Aksum was the most important trading center in the region. People from Arabia and Iran founded Kilwa in the late a.d. 900s. Its trading connections extended all the way to Alexandria on the Mediterranean Sea. Aksum traders specialized in sea routes that connected the Red Sea to India.

Through the port of Adulis flowed gold and ivory, as well as raw materials. It is possible that Aksum sold captives for the slave trade. Aksum traded glue, candy, and gum arabic, a substance from acacia trees that today is used in the food industry. Christianity spread from its origin in Jerusalem along the trade routes. The Aksum kings adopted Christianity as their religion.

Trade Cities

Beginning around the A.D. 900s, after the decline of Aksum, Arabs settled on the East African coast of the Indian Ocean. The religion of Islam grew steadily more important in the region. At the same time, the Arabic and Bantu languages mingled to create a new language. This language is known as Swahili. The name comes from an Arabic word meaning "coast dwellers." Swahili is widely spoken today in Tanzania and Kenya, as well as in some other countries.

Gradually, the coastal settlements formed independent trading states. From coastal Somalia southward, along the shores of Kenya and Tanzania, these city-states prospered. They included Mogadishu, Lamu, Malindi, and Mombasa.

The trade city of Kilwa was located on an island just off the southern coast of present-day Tanzania. People from Arabia and Iran founded Kilwa in the late a.d. 900s. The merchants of Kilwa dealt in copper, iron, ivory, and gold. They exchanged these goods for products from many lands, including Chinese porcelain and Indian cotton.

Kilwa was a walled city. Its ruler lived in an impressive palace. For two centuries, the city was probably the wealthiest trading center in East Africa. The fourteenth-century traveler Ibn Battuta praised Kilwa as a beautiful city. At the time of Ibn Battuta's visit, Kilwa was ruled by Abu al-Mawahib. The sultan was so generous that people called him "the father of gifts."

Identifying Compare the economies of the coastal city-states in East Africa to those of the kingdom of Aksum.

The Colonial Era

What was the effect of colonization on East Africa?

Until the late 1800s, most Europeans knew little or nothing about Africa. Two of the continent's most famous explorers were Henry Morton Stanley and David Livingstone. In 1878 Stanley published a popular travel book about his adventures in Africa. The book's title was *Through the Dark Continent*. The goal of Stanley's journey was to locate Livingstone, a medical missionary. Livingstone had traveled to Africa in the hope of locating the source of the Nile River.

European Traders

Just before 1500, the European age of discovery began to impact East Africa. Among the European countries, Portugal took the lead in overseas exploration. Along with other Europeans, the Portuguese established a sea route to India. From Europe, they sailed south along the west coast of Africa and then along the east coast of Africa. Then, they sailed along the coast of Arabia and on to India. This was a much easier and less expensive way to trade with India than any of the overland trade routes. In this way, the Portuguese were able to bring back many valuable spices from India.

As trade increased, the Portuguese began to demand tribute, or a regular tax payment, from the East African trading cities. The Portuguese had religious as well as economic motives; they believed that Christianity should replace Islam as the region's religion. Portuguese influence in the region did not last long, however. The Portuguese could not withstand attacks by African groups in the region. Other European countries became interested in colonizing Africa.

European Colonial Rule

In the late 1800s, European leaders set out a plan to dominate and control the continent of Africa. The action by which one nation is able to control another smaller or weaker nation is known as imperialism.

Africa was carved up into colonies. The reasons for colonization included economic profit, access to raw materials, and the opening of new markets. These reasons also included national pride, the protection of sea routes, the maintenance of the balance of power, and a quest to convert Africans to Christianity.

Occasional rebellions challenged European colonial rule. An especially bloody rebellion occurred against British and Egyptian domination in Sudan. Muhammad Ahmad, a religious and military leader, declared that he was the Mahdi, or redeemer of Islam. Mahdist forces succeeded in capturing Khartoum, the Sudanese capital. They established a new state there. In 1898 the British succeeded in reasserting their control of the region.

Independent Ethiopia

The revolt against foreign influence in Sudan eventually resulted in failure. In Ethiopia, however, the desire for independence prevailed. Italy had colonized the neighboring territory of Eritrea along the Red Sea coast. In 1889 the Italians signed a treaty with the Ethiopian emperor, Menelik II. Over the next few years, Italy claimed that, according to one provision of this treaty, it had the right to establish a "protectorate" in Ethiopia.

Menelik firmly denied these claims. He rejected the treaty in 1893. The Italian governor of Eritrea finally launched a major military attack in response in 1896. At the Battle of Adwa on March 1 of that year, Menelik defeated the Italian army. This conflict was one of the most important battles in African history. After the Battle of Adwa, the European powers had no choice but to recognize Ethiopia as an independent state. Physical geography played an important role in Ethiopia's ability to remain independent. Rugged mountains with difficult terrain provided a barrier that was difficult for attacking forces to overcome.

Explaining What was the significance of Menelik II's victory at the Battle of Adwa in 1896?

Independence

How did the countries of East Africa gain their independence?

After the end of World War II in 1945, a movement ensued to end colonialism in Africa, Asia, and Latin America. In East Africa, particularly, Europeans were seen as disrupting traditional life. In addition, European countries were weakened by the fighting in World War II. Because of these pressures, Europeans granted East African colonies their independence in the 1960s. However, many of the former colonies faced difficulties in establishing their own countries.

New Nations Form

The early 1960s was a turning point for East Africa. During the period from 1960 to 1963 alone, six East African countries obtained independence: Somalia, Kenya, Uganda, Tanzania, Rwanda, and Burundi.

The achievement of independence in Kenya and Tanzania was especially important. Kenya had been a British colony for about 75 years. British plantation owners dominated the economy. They disrupted the traditional East African agricultural system. Local village agriculture was replaced by the production of cash crops, such as coffee and tea, on a large scale. Native people, such as the Kikuyu, were driven off the land. The British also controlled the government.

A nationalist named Jomo Kenyatta led the political protest movement in Kenya and negotiated the terms of independence for his country. In late 1963, Kenya became independent. Jomo Kenyatta served as the country's first prime minister and later as its president.

Tanzania also sought independence. Before independence, the country was called Tanganyika. When Germany was defeated in World War I, Tanganyika came under British control. Independence was the ultimate goal for Tanganyika—a goal it reached in late 1961. Three years later, the country merged with Zanzibar, and its name was changed to Tanzania.

Highland Countries

The Highland areas had a difficult road to independence. Many ethnic groups in the former colonies were often in conflict with one another. Ethnic tensions have long simmered in Rwanda and Burundi. These countries are home to two rival ethnic groups. The Hutu are in the majority there, and the Tutsi are a minority. In the 1990s, the Hutu-dominated government of Rwanda launched an attack on

the Tutsi that amounted to genocide—the slaughter of an entire people on ethnic grounds. Hundreds of thousands of people were killed.

Bloodshed also stained the history of Uganda after independence. From 1971 to 1979, the country was ruled by the military dictator Idi Amin. Cruelty, violence, corruption, and ethnic persecution marked Amin's regime. Human rights groups estimate that hundreds of thousands of people lost their lives under his rule. Amin was finally forced to flee into exile. He died in 2003.

The Horn of Africa

The history of Somalia since independence in 1960 offers another example of the problems East African countries have faced. Since the 1970s, Somalia has been scarred by civil war. Border disputes with Ethiopia have also increased instability. Rival clan factions have engaged in bitter feuds. Drought has brought famine to much of the country. In late 1992, the United States led a multinational intervention force in an effort to restore peace to the country. The civil war in Somalia, however, remained unresolved.

The instability, misery, and violence in Somalia also have affected neighboring countries. Thousands of refugees, for example, have made their way into Kenya. A refugee is a person who flees to another country for safety.

Elsewhere in the Horn of Africa, more than 30 years of fighting have marked the recent history of Eritrea. This country achieved independence in 1993 after a long struggle with Ethiopia. Access to the sea was an important territorial issue in this conflict. In the years since independence, Eritrea has undertaken military conflicts with Yemen and resumed attacks on Ethiopia. The country is unable to provide enough food for its people. Furthermore, economic progress has been limited because many Eritreans serve in the army rather than in the workforce.

A New Nation

Africa's newest country emerged as a result of civil war. Sudan won independence from Egyptian and British control in 1956. Leaders in southern Sudan were angered because the newly independent Sudanese government had failed to carry out its promise to create a federal system. Southern leaders also feared that the new central government would try to establish an Islamic and Arabic state.

Religion was also an issue that generated conflict. Most people in Sudan are Muslim, but in the southernmost 10 provinces, most people follow traditional African religious practices or the Christian religion. Economic issues are also a problem. The southern provinces hold a large share of the area's petroleum deposits. As a result of the civil war, the country of South Sudan became independent from Sudan in 2011.

Determining Central Ideas How has civil war played an important part in the recent history of East Africa?

LESSON 2 REVIEW

Reviewing Vocabulary

1. What were some of the factors that led European nations to practice *imperialism* in Africa?

Answering the Guiding Questions

2. **Identifying** Discuss two important events that occurred in the history of the Ethiopian kingdom of Aksum.

3. **Identifying** Which two countries took the lead in the European colonization of East Africa in the late 1800s?

4. **Describing** What have been some of the major problems that East African countries have faced in building their nations after achieving independence?

5. **Narrative Writing** You are a modern-day Ibn Battuta, traveling through East Africa. Write a series of journal or diary notes telling about the people you meet and the sights you see there.

Ch. 20 Lesson 2 Vocabulary

DIRECTIONS: Define the following terms the best that you can, using the lesson material provided.

1. IMPACT:

2. TRIBUTE:

3. IMPERIALISM:

4. GENOCIDE:

5. REFUGEE:

DIRECTIONS: Identify THREE countries located in East Africa!

Ch. 20 Lesson 2 Assignment

Using the reading, please answer the questions the best that you can!

Your email address (vwill@erieriseacademy.org) will be recorded when you submit this form. Not you? [Switch account](#)

* Required

Why was trade so important in East Africa? * 1 point

- It resulted in more wars and disease.
- It allowed for the spread of Christianity and Islam into the region.

Which TWO places were on either side of Nubia? * 1 point

- The Libyan Desert on the West and Red Sea on the East
- The Nile River on the South and Mississippi River on the North.

How did Nubia and Egypt interact with each other? 1 point

- The Amazon River
- The Nile River

What were TWO things that were traded between the Egyptians and Kushites? * 1 point

- Coffee and Tobacco
- Slaves and Cattle



How did the people of Aksum accumulate their wealth? *

1 point

- War with other nations
- Trade

What did the people of Aksum sell with their slaves? *

1 point

- Captives
- Weapons

Which religion did the Aksum kings adopt?

1 point

- Islam
- Christianity

When Arabic and Bantu interacted, they formed which language? *

1 point

- Swahili
- Aramaic

How many city-states were included in the countries of Kenya and Tanzania? *

1 point

- 4
- 3

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Ch. 20 Lesson 2 Quiz

Answer the questions the best that you can, choosing the best possible answer!

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* Required

A regular tax payment by a weak country to a strong country is a donation * 1 point

- TRUE
- FALSE

The walled trade city founded in the A.D. 900s was Kush. * 1 point

- TRUE
- FALSE

Powerful civilization that arose in Ancient Nubia was Kush: * 1 point

- TRUE
- FALSE

Actions by which stronger nations exert control over weaker nations was Imperialism. * 1 point

- TRUE
- FALSE



Language that is a mixture of Arabic and Bantu is Aramaic. *

1 point

- TRUE
- FALSE

Which burial custom did the Kushites adopt from the Egyptians? *

1 point

- They made and lit funeral pyres for their dead.
- They held services in boats on the Nile River to honor their dead.
- They built pyramids to mark the tombs of their rulers and nobles.
- They made caskets of bronze and gold and buried their dead.

In which area of East Africa did Arabs begin to settle in the A.D. 900s? *

1 point

- On the Indian Ocean Coast
- Along the Nile River
- Around Lake Victoria
- on the slopes of Mt. Kilimanjaro

Why did the Portuguese travel to India by sea not by land around 1500? *

1 point

- The British and Germans controlled the land routes.
- Travel by sea was easier and much less costly
- There were no land routes to India from Europe.
- The Portuguese lacked experience at overland travel.



Which European country claimed it had the right to establish a "protectorate" in Ethiopia in 1889? *

1 point

- Britain
- France
- Spain
- Italy

How did conflict in Somalia in 1992 affect Kenya? *

1 point

- Civil War broke out in Kenya.
- Kenyans joined forces with Somalis against European control.
- Refugees from Somalia made their way to Kenya.
- The United States led an intervention force in Kenya.

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Temperature, Thermal Energy, and Heat

May 25th - May 29th
6th Grade Science Lesson
Adapted from Pearson

What are temperature, thermal energy, and heat?

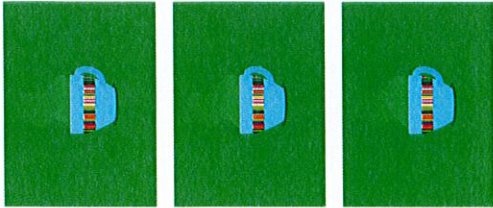


What Determines the Temperature of an Object?

- **Temperature** is a measure of how hot or cold something is compared to a reference point
- Scientifically, temperature is a measure of the average kinetic energy of the particles in an object.
 - Remember the faster an objects are moving the hotter it is and the energy of movement is kinetic energy!
- **Temperature Units**
 - USA uses Fahrenheit Scale (°F)
 - Most of the world uses Celsius scale (°C)
 - Most scientists use Kelvin (K)

What is Thermal Energy?

- While temperature is a measure of the average kinetic energy of the individual particles in an object, it is NOT a measure of the total amount of energy in an object.
- **Thermal Energy** is the total energy of all the particles in an object.
 - It depends on the temperature of an object, the number of particles in it, and how those particles are arranged

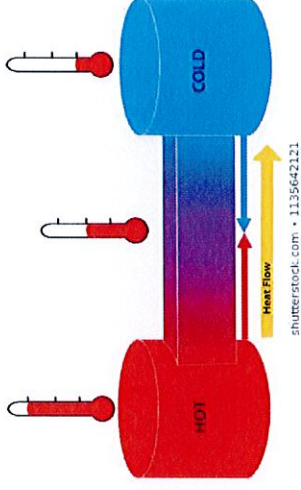


Factors of Thermal Energy

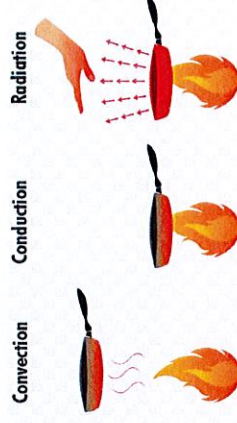
- The more particles an object has at a given temperature, the more thermal energy it has
 - Example: A large pot of water at 150 °F has more thermal energy than a small cup of hot water at 150 °F
- The higher the temperature of an object, the more thermal energy the object has
 - Example: A cup of tea that is 212 °F has more thermal energy than a cup of tea that is 100 °F

What is Heat?

- Heat is the transfer of thermal energy from a warmer object to a cooler object
 - The warmer object will cool down, and the cooler object will warm up until they are the same temperature. When this happens, heat stops transferring.



How does heat transfer?

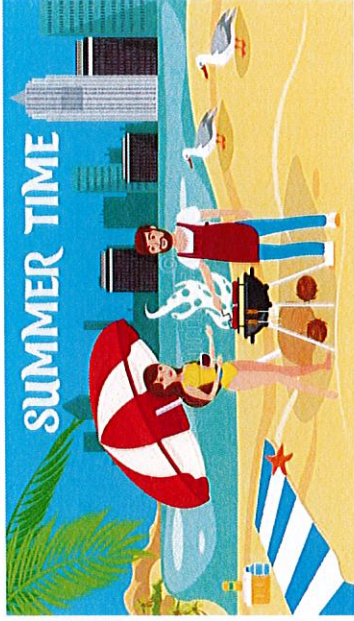


How is Heat Transferred?

- Heat is transferring around you all the time.
- Heat is transferred from warmer areas to cooler areas by conduction, convection, and radiation.

Convection, Conduction, Radiation

- **Convection**
 - Convection is a type of heat transfer that occurs only in fluids such as water and air
- **Conduction**
 - Conduction transfers heat from one particle of matter to another within an object or between two objects
 - Heat transferred from direct contact (touching)
- **Radiation**
 - Radiation is the transfer of energy by electromagnetic waves.
 - Radiation is the only form of heat transfer that does not require matter



- **Conduction**- Feeling the warm sand on their feet and the meat on the grill
- **Convection**- Hot air circulating all around
- **Radiation**- Heat from the sun

Radiation:

"Hey Duke, doesn't that fire feel good."

Conduction:

"Ouch! That poker's too hot to hold with my bare hands."

Convection:

"I'll turn on the fans. All the warmest air is up near the ceiling."

conduction!!	convection!!	radiation!!
<p>Transfer of thermal energy from one material to another by direct contact</p> <p>I touched the hot stove burner!!</p>	<p>The transfer of thermal energy by the circulation/movement of a liquid or gas</p> <p>The hot water rises to the top, and the cold water sinks to the bottom.</p>	<p>When energy is absorbed by a surface, it heats the surface</p> <p>When energy is absorbed by a surface, it heats the surface</p>

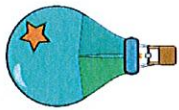
Create your own at Storyboard That

An oven mitt gets warmer while transporting a hot baking dish



conduction

Hot air inflates a hot air balloon



convection

Marshmallow heats over a fire



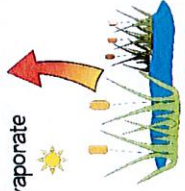
Convection/radiation

Heat from the table is absorbed by ice cubes.



conduction

The sun causes water in a pond to evaporate



radiation

A hot horseshoe transfers heat to the tongs



conduction

A pot sitting on a hot burner



conduction

A spoon gets warmer after sitting in a bowl of soup



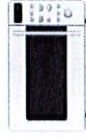
conduction

A bowl of oatmeal cools



convection

A microwave heats food using microwaves via the Electromagnetic Spectrum



radiation

Water is warmed over a fire



Convection/radiation

An infrared heat sensor detects body heat



radiation

YouTube Questions - Bill Nye Heat

Use the video to help you answer the questions!

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* Required

Bill Nye YouTube Video



Heat is a form of _____ and can do work. *

1 point

- waves
- energy
- movement

Conduction, convection, and radiation are 3 ways that _____ moves. * 1 point

- heat
- matter
- waves



The invisible heat from the sun is called _____.*

1 point

- conduction
- convection
- radiation

The movement of hot air up to cooler air is _____.*

1 point

- conduction
- convection
- radiation

_____ is the transfer of heat from one object to another.*

1 point

- Conduction
- Convection
- Radiation

All _____ have heat.*

1 point

- people
- molecules
- waves

Moving molecules make things cool down.*

1 point

- True
- False



An object with more molecules has more energy than an object with fewer molecules. *

1 point

- True
- False

Cooler water will sink while warmer water _____.*

1 point

- sinks
- stays the same
- rises

The movement of _____ air pushing up warmer air is called natural convection. *

1 point

- cooler
- warmer

An _____ lamp will show invisible heat radiation. *

1 point

- infrared
- UV
- desk

Heat and light travel in _____.*

1 point

- lines
- squares
- waves



Infrared _____ is also known as heat energy. *

1 point

- light
- waves
- energy

Heat is measured by using calories or joules. *

1 point

- True
- False

Walls, floors, and ceiling _____ heat. *

1 point

- absorb
- reflect
- ignore

Send me a copy of my responses.

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Lesson Check - Temperature, Thermal Energy, and Heat

Only complete this once you have finished everything else for the week! This is a chance for you to show me what you have learned.

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* Required

What is temperature? *

2 points

Your answer

Which object would have more thermal energy? *

1 point

- soup that is cold
- soup that is warm
- soup that is very hot

Which object would have more thermal energy? *

1 point

- a small cup of boiling water
- a large pot of boiling water
- a glass of boiling water

Heat is transferring around you all the time. *

1 point

- True
- False



_____ is a type of heat transfer that occurs only in fluids such as water and air. *

1 point

- Radiation
- Conduction
- Convection

_____ is a type of heat transfer that occurs by electromagnetic waves. *

1 point

- Radiation
- Conduction
- Convection

_____ transfers heat from one particle of matter to another within an object or between two objects. (Heat transfer from touching or direct contact) *

1 point

- Radiation
- Conduction
- Convection



The picture shows boiling water. Identify and explain one type of heat transfer that is happening. (convection, conduction, or radiation) *

2 points



Your answer

Submit

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