

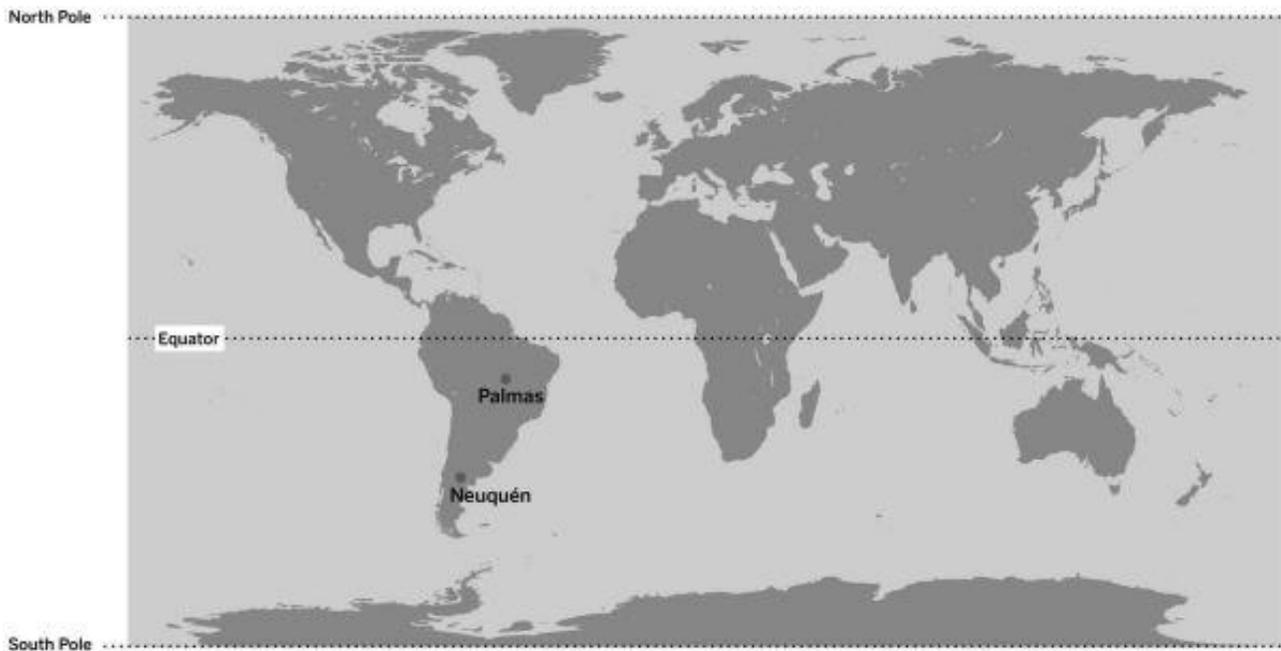
Name: _____ Advisory: _____

Air Temperature Around the World

Chapter Question: What determines the air temperature of a location on Earth?

Today's Objective: KWBAT analyze and interpret world maps of incoming solar energy and temperature to construct visual models and explain why two locations have different temperatures.

Do Now: Level 1



1. Palmas is closer to the equator than Neuquén. Which location has a *warmer* air temperature and why?
 - a. Neuquén, because more energy is transferred from the sun directly to the air.
 - b. Neuquén, because more energy is transferred from the sun directly to the surface, and then from the surface to the air.
 - c. Palmas, because more energy is transferred from the sun directly to the surface, and then from the surface to the air.
 - d. Palmas, because more energy is transferred from the sun directly to the air.

CFS:

- Annotate the Diagram/Question
- Rephrase the Question
- Make a Prediction
- Use Scrap Paper
- Choose the Best Answer

Key Concept

When Temperature _____ Energy _____.

When Temperature _____ Energy _____.

Energy COMES from the _____ hits Earth's _____ and transfers to the _____.

Air Temperature at Different Locations

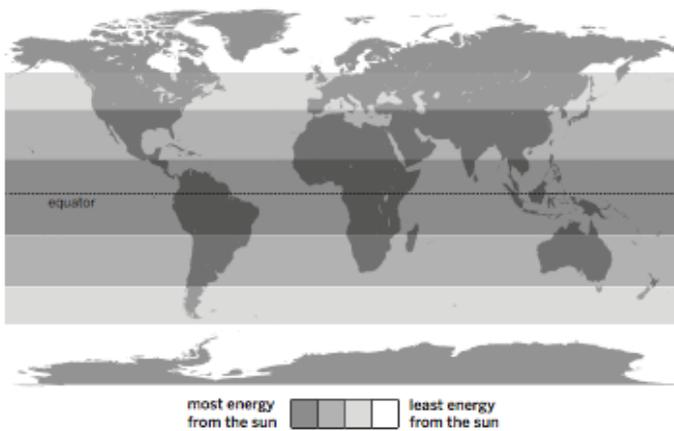
Discussing Energy and Temperature Maps

Take 2 minutes to annotate the diagrams below. Afterwards silently answer the questions given.

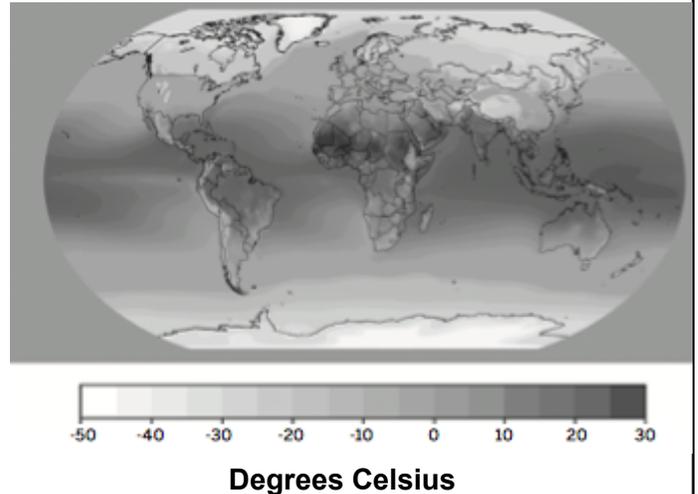
1. What information does your map show?

2. What evidence do the diagrams provide about "Why do different locations have different air temperatures?"

Incoming energy from the sun

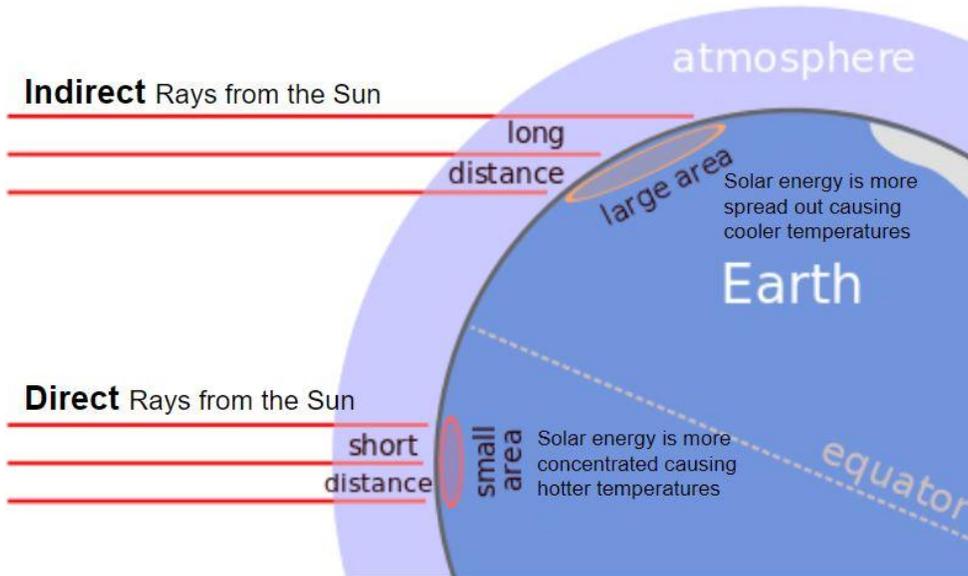


Global Air Temperature



Why Different Temperatures??

In the diagram annotate any ideas you have about temperature.



1. Which places get more concentrated or direct rays?

- At the Equator
- At the Poles
- All places get sunlight equally

2. Which places get more spread out or indirect rays?

2. Which places get more spread out or indirect rays?

- At the Equator
- At the Poles
- All places get sunlight equally

NJSLA Prep and Reviewing

1. Mr. Tan is using what he knows about cause-and-effect relationships to write a paper explaining Ocean Currents. How could he describe the cause and effect in his paper?

- There is only one cause for ocean currents, because each effect has one cause.
- There can be more than one cause for the effect of ocean currents.
- It is impossible to determine which factors cause ocean currents and which factors are the effects of ocean currents.
- Some things, like ocean currents, do not have a cause because they just happen.

CFS:

- Annotate the Diagram/Question
- Rephrase the Question
- Make a Prediction
- Use Scrap Paper
- Choose the Best Answer

2. Philly is 15°C (59°F) in the spring. What is the source for most of the energy that causes this temperature?

- The Sun
- Volcanoes
Coal and Oil
- Trees
- The Ocean

CFS:

- Annotate the Diagram/Question
- Rephrase the Question
- Make a Prediction
- Use Scrap Paper
- Choose the Best Answer

3. A student's respiratory system is not working well. Why is this a problem for their ability to exercise?
- a. Their cells will not work because molecules from air will be too large for her body to use.
 - b. Their respiratory system will not be able to break down molecules from air into oxygen.
 - c. Their digestive system will have to work twice as hard to get the same amount of energy from glucose molecules.
 - d. Their cells will not work well when they have low levels of oxygen.

CFS:

- Annotate the Diagram/Question
- Rephrase the Question
- Make a Prediction
- Use Scrap Paper
- Choose the Best Answer

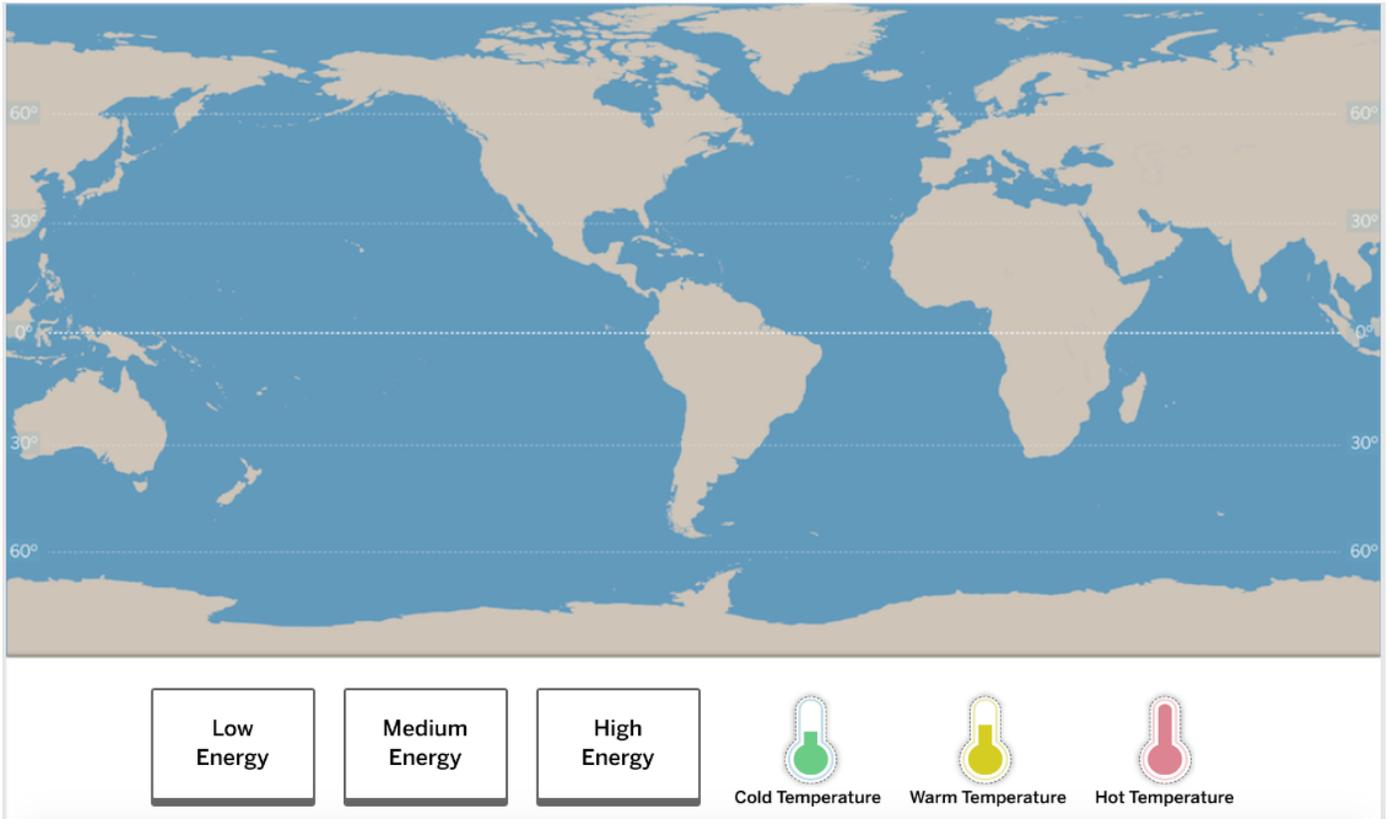
Check For Understanding Open Ended

1. How does the incoming energy at the equator differ from the North or South Pole?

2. A climate scientist catches a plane at the equator and begins flying south towards the South Pole. There is a tool on the plane that measures the air temperature near the ground as the plane flies above. The climate scientist will record the air temperature every 30 minutes as the plane travels south. What do you predict the climate scientist will notice about the data they record as the plane gets farther from the equator?

3. Make a prediction about cold, warm, and hot places on Earth.

a. Use the Key under the map to predict on a location that is cold, one location that is warm, and two locations that are hot.



Open Ended Response: CER Activity

DIRECTIONS: Circle the Claim that you think is best supported by evidence collected in the heating experiment.

- Claim 1: Energy is transferred from the sun to the air above Christchurch directly.
- Claim 2: Energy is transferred from the sun to the surface and then the air above Christchurch.

Explain how evidence from the heating experiment supports the claim you chose.

CFS:

- Select a Claim
- Use at least 1 piece of Evidence from Lab
- Reasoning that explains how the evidence supports your claim

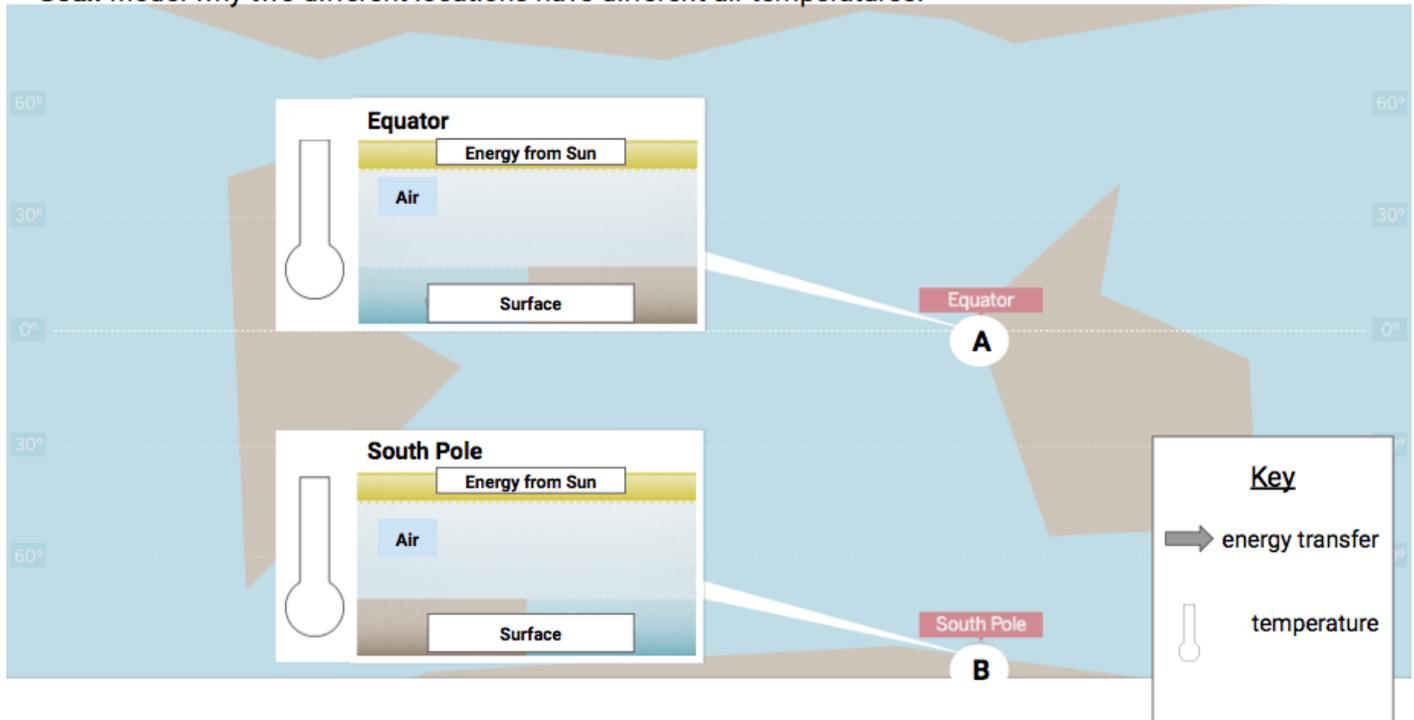
Chapter 1 Task

Model:

To complete the model:

1. Use arrows to represent how the air gets energy. (2 pts)
2. Fill in the thermometer to the left of each location to represent its approximate air temperature. (2 pt)
 - a. Use the energy labels so that they show what must be true about the energy at each location.

Goal: Model why two different locations have different air temperatures.



1. Which city is warmer? Explain what makes that city warmer than the other city. (4pts)

CFS:

- Answer in complete sentences.
- Vocabulary:
 - Temperature
 - Energy Transfer
 - Equator
 - Sun, Surface, Air

Exit Ticket

North Pole



South Pole

1. Hopetown is farther from the equator than Kamina. Which location has a colder air temperature and why?
 - a. Kamina, because less energy is transferred from the sun directly to the air.
 - b. Kamina, because less energy is transferred from the sun directly to the surface, and then from the surface to the air.
 - c. Hopetown, because less energy is transferred from the sun directly to the air.
 - d. Hopetown, because less energy is transferred from the sun directly to the surface, and then from the surface to the air.

CFS:

- Annotate the Diagram/Question
- Rephrase the Question
- Make a Prediction
- Use Scrap Paper
- Choose the Best Answer

Thanksgiving

S	R	G	S	I	Y	N	M	U	T	U	A	G	E
G	P	B	E	P	I	L	G	R	I	M	S	N	F
A	S	L	O	M	U	M	F	E	F	R	E	I	A
S	T	A	T	G	H	A	R	V	E	S	T	V	M
M	U	C	A	C	O	R	N	Y	P	R	I	I	I
P	F	K	T	Y	V	C	P	E	U	E	N	G	L
Y	F	F	O	K	I	E	L	K	M	T	N	S	Y
V	I	R	P	E	E	L	Y	R	P	T	O	K	L
A	N	I	D	Y	P	E	M	U	K	F	V	N	L
R	G	D	E	H	I	B	O	T	I	E	E	A	A
G	S	A	H	Y	A	R	U	A	N	A	M	H	F
G	M	Y	S	T	O	A	T	A	P	S	B	T	C
A	S	A	A	G	H	T	H	A	I	T	E	R	N
F	A	M	M	S	A	E	P	N	E	E	R	G	K

- BLACK FRIDAY
- FAMILY
- TURKEY
- GRAVY
- STUFFING
- HARVEST
- CELEBRATE
- PUMPKIN PIE
- PILGRIMS
- MASHED POTATOES
- NOVEMBER
- FEAST
- CORN
- GREEN PEAS
- THANKSGIVING
- FALL
- AUTUMN
- PLYMOUTH

Tiktok Word Search

E	C	N	A	D	O	D	D	N	P	A	F	I	A
D	N	F	I	T	D	A	A	C	U	C	O	H	S
A	E	R	A	H	O	M	L	S	P	A	N	Y	C
S	A	D	D	H	P	O	S	T	V	P	G	P	H
A	O	A	D	N	S	G	E	N	D	S	Y	E	A
E	V	S	I	N	A	D	O	D	Z	L	R	H	S
A	P	H	S	H	U	N	H	O	H	A	T	O	E
A	L	Y	O	P	F	O	E	D	N	C	I	U	D
O	C	E	N	U	A	S	U	O	M	A	F	S	A
H	H	N	I	S	C	H	A	L	O	E	E	E	G
N	A	C	D	D	A	E	S	F	M	N	H	D	E
P	R	H	L	A	S	O	S	I	G	S	D	I	N
A	L	U	E	A	I	N	A	V	A	E	S	U	E
P	I	E	A	D	F	C	E	I	U	M	T	U	R

- FAMOUS
- AVANI
- CHARLI
- POST
- ADDISON
- CHASE
- ZOE
- DANCE
- HYPEHOUSE
- RENEGADE