

Name: _____

MYSTERY science

3rd Grade

Student Booklet

MYSTERYscience Worksheets

NGSS Grade 3 Unit

Stormy Skies Mysteries:



Mystery 1

Where do clouds
come from?



Mystery 2

How can we predict
when it's going
to storm?



Mystery 3

Why are some places
always hot?



Mystery 4

How can you keep a
house from blowing
away in a windstorm?

GAS TRAP

Name: _____

MYSTERY
SCIENCE
Stormy Skies | Mystery 1

Gas Trap Tester



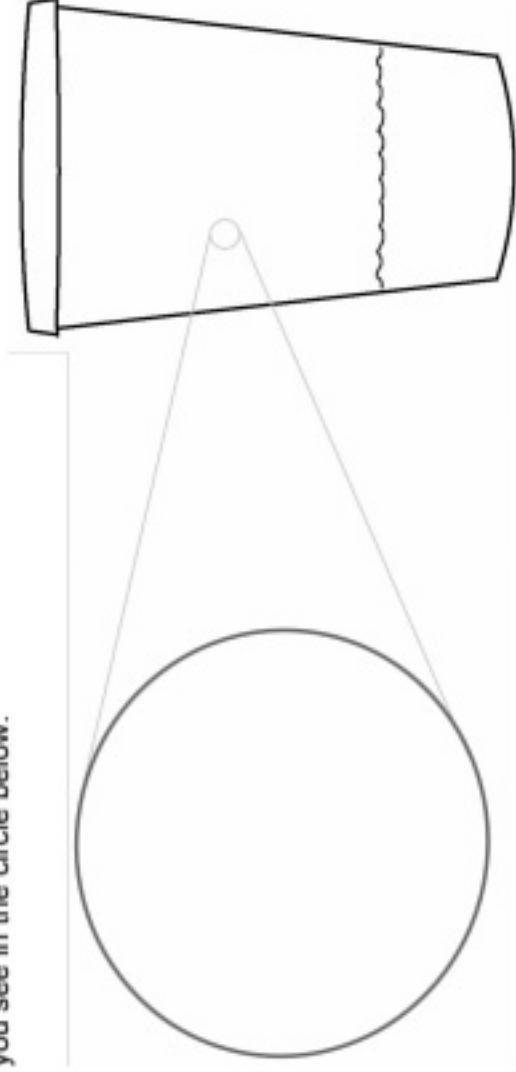
Can you read
all these words
through your cup?

Maybe you can, maybe not.
To find out—try it and see!

1. Before you begin the experiment, try reading your GAS TRAP TESTER through your cup. What's the last line you can read? Write it here: _____

2. Now that you have the warm water, try reading the GAS TRAP TESTER through your cup again. What's the last line you can read now? Write it here: _____

3. Look at the sides of your cup up close (as close as you can).
Draw what you see in the circle below:



WAIT TO DO QUESTION #4 UNTIL AFTER YOUR CLASS DISCUSSION

4. Open the lid and feel the inside of the cup. How does it feel? _____
Feel the bottom of the lid. How does that feel? _____

Stormy Skies

Mystery 1: Where do clouds come from?

Name: _____

Date: _____

End of Mystery Assessment

1. **Draw** a picture that shows how clouds form in the sky. **Label** the steps in your picture.



2. Explain your drawing above. Where is the water before it forms a cloud? What forms does the water take as it becomes a cloud?

3. After a couple days, puddles on the sidewalk shrink and disappear. What happens to the water?

The liquid water _____

4. Roberto thinks that clouds can't be made out of water because clouds are white and water is clear. What do you think? Explain to Roberto why clouds look white. Use examples to convince him!

Clouds look white because _____

Is it coming your way?
(See pages 5-6)

- Brings rain and lightning
- Storm lasts under an hour

cloud _____

But this cloud can change!
(See next page)

- Gloomy skies—but no storm

cloud _____

Is it coming your way?
(See pages 5-6)

- Brings rain
- Storm can last all day

cloud _____

cloud _____

The

STORM Spotter's Guide

Name: _____
Date: _____

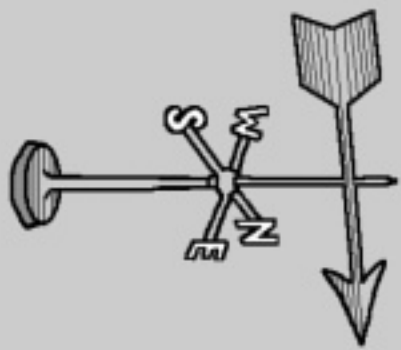
Collect them all!

Watch the sky and make a note if you see these clouds.
Can you spot them all?

Cloud Type	Date I saw it
<input type="checkbox"/> Cumulus	
<input type="checkbox"/> Cumulonimbus	
<input type="checkbox"/> Stratus	
<input type="checkbox"/> Stratocumulus	

Is that storm cloud heading your way?

Check the wind to find out!



- From what direction does the wind *usually* blow there?

- So, to see the weather coming my way, I can look toward:

WILL IT STORM?

Look at the screen to see the pictures in color.



Photo #1: Rowboat

What clouds are in the sky?

cumulus cumulonimbus stratus stratocumulus

Are those stormclouds? Yes No

If they are, how long will the storm last?

less than an hour hours and hours no storm

Are the clouds coming your way? Yes No

Would you row across the lake? Why or why not?



Photo #2: Picnic

What clouds are in the sky?

cumulus cumulonimbus stratus stratocumulus

Are those stormclouds? Yes No

If they are, how long will the storm last?

less than an hour hours and hours no storm

Are the clouds coming your way? Yes No

Would you have a picnic here? Why or why not?

WILL IT STORM?



Photo #3: Beach

What clouds are in the sky?

cumulus cumulonimbus stratus stratocumulus

Are those stormclouds? Yes No

If they are, how long will the storm last?

less than an hour hours and hours no storm

Are the clouds coming your way? Yes No

So would you go for a swim? Why or why not?



Photo #4: Same beach, later that day

What clouds are in the sky now?

cumulus cumulonimbus stratus stratocumulus

Are those stormclouds? Yes No

If they are, how long will the storm last?

less than an hour hours and hours no storm

Are the clouds coming your way? Yes No

Would you go for a swim now? Why or why not?

WILL IT STORM?



Photo #5: Baseball game

What clouds are overhead?

cumulus cumulonimbus stratus stratocumulus

What clouds are in the distance?

cumulus cumulonimbus stratus stratocumulus

What kind of clouds are coming your way?

cumulus cumulonimbus stratus stratocumulus

Are the clouds that are coming your way
stormclouds? Yes No

If they are, how long will the storm last?

less than an hour hours and hours no storm

So would you play ball? Why or why not?

Stormy Skies

Mystery 2: How can we predict when it's
going to storm?

Name: _____

Date: _____

End of Mystery Assessment

1. How would you spot each of these clouds? Describe what you would look for.

cumulus	
cumulonimbus	
stratus	
stratonimbus	

2. Denai says that clouds covering the whole sky means it's going to rain. What do you think?

3. Why do stratonimbus storms usually last all day long, but cumulonimbus storms only last for a short time?

Climates in the Americas

Name: _____



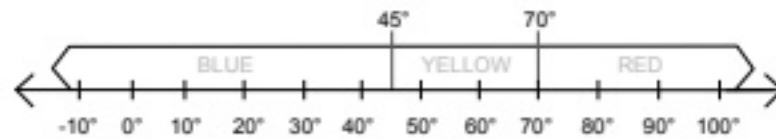
CLIMATE KEY

- ☐ This climate is cold all year long.
- ☐ This climate has cold winters and hot summers.
- ☐ This climate has warm winters and hot summers.
- ☐ This climate is hot all year long.

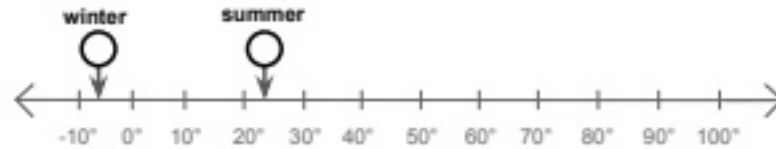
Climates in the Americas (Fahrenheit)

Name: _____

Climate Decoder

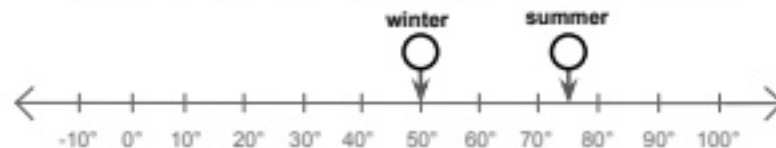


Antarctica Research Station



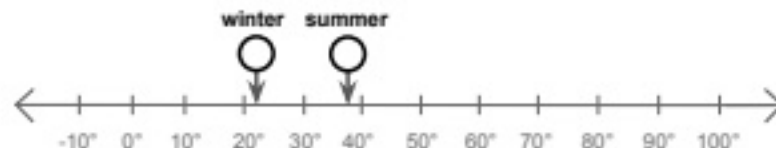
climate
color

Atlanta, Georgia, USA



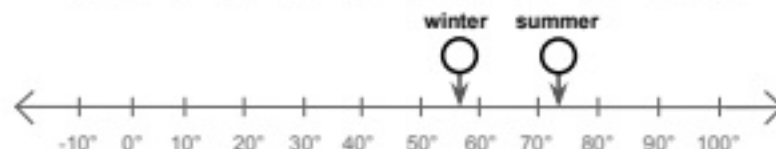
climate
color

Utqiagvik, Alaska, USA



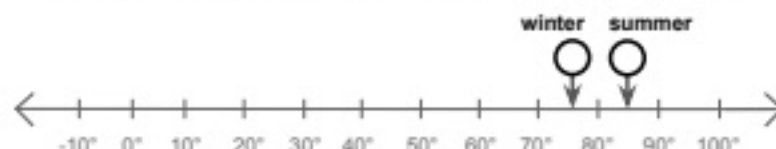
climate
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Buenos Aires, Argentina



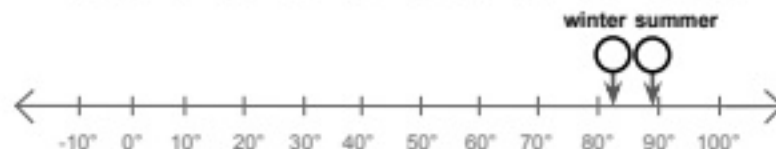
climate
color

Cancun, Mexico:



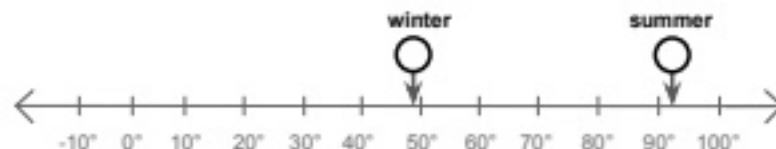
climate
color

Georgetown, Guyana



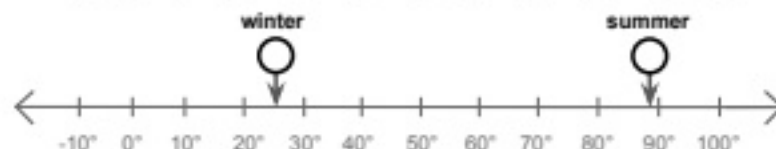
climate
color

Las Vegas, Nevada, USA



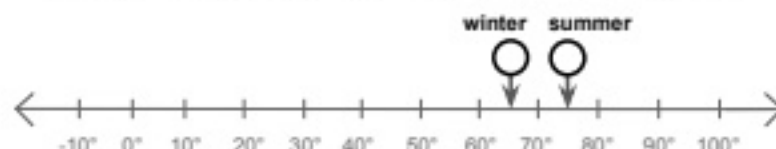
climate
color

Perito Moreno, Argentina



climate
color

Tacna, Peru



climate
color

Winnipeg, Canada



climate
color

Note: All temperatures are in Fahrenheit



Climates in Europe & Africa

Name: _____



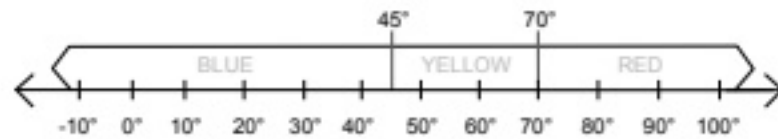
CLIMATE KEY

- ☐ This climate is cold all year long.
- ☐ This climate has cold winters and hot summers.
- ☐ This climate has warm winters and hot summers.
- ☐ This climate is hot all year long.

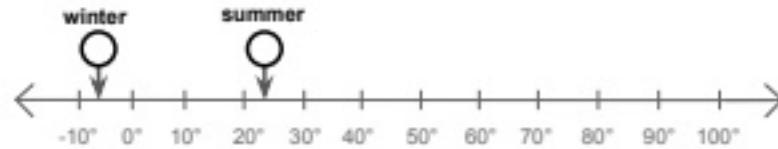
Climates in Europe & Africa (Fahrenheit)

Name: _____

Climate Decoder

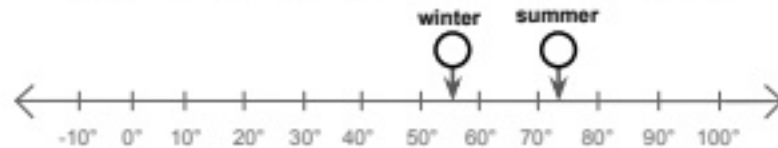


Antarctica Research Station



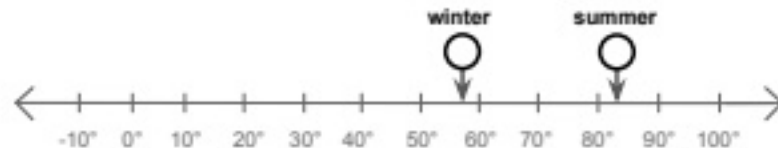
climate
color

Casablanca, Morocco



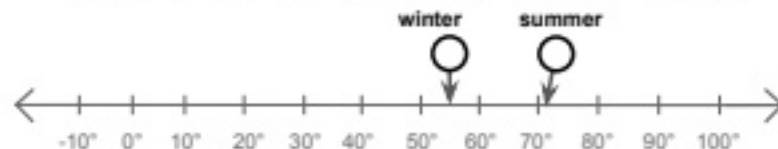
climate
color

Cairo, Egypt



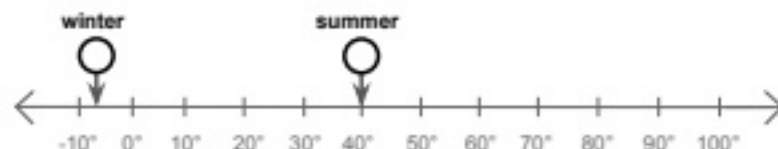
climate
color

Cape Town, South Africa



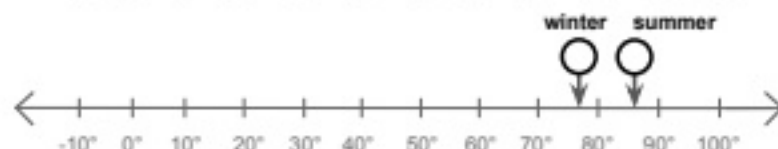
climate
color

Daneborg, Greenland



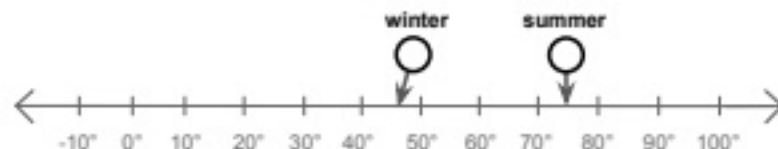
climate
color

Juba, South Sudan



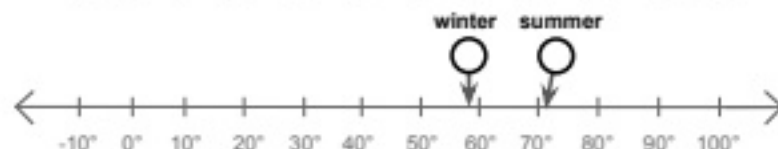
climate
color

Rome, Italy



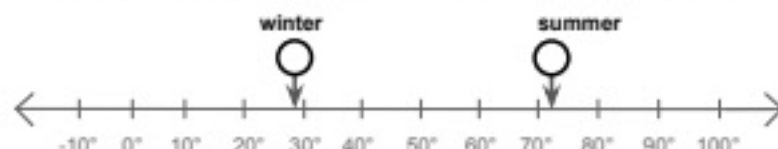
climate
color

The island of Madagascar



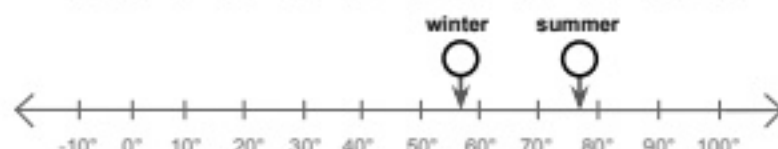
climate
color

Warsaw, Poland



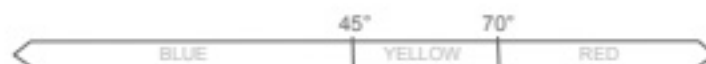
climate
color

Windhoek, Namibia



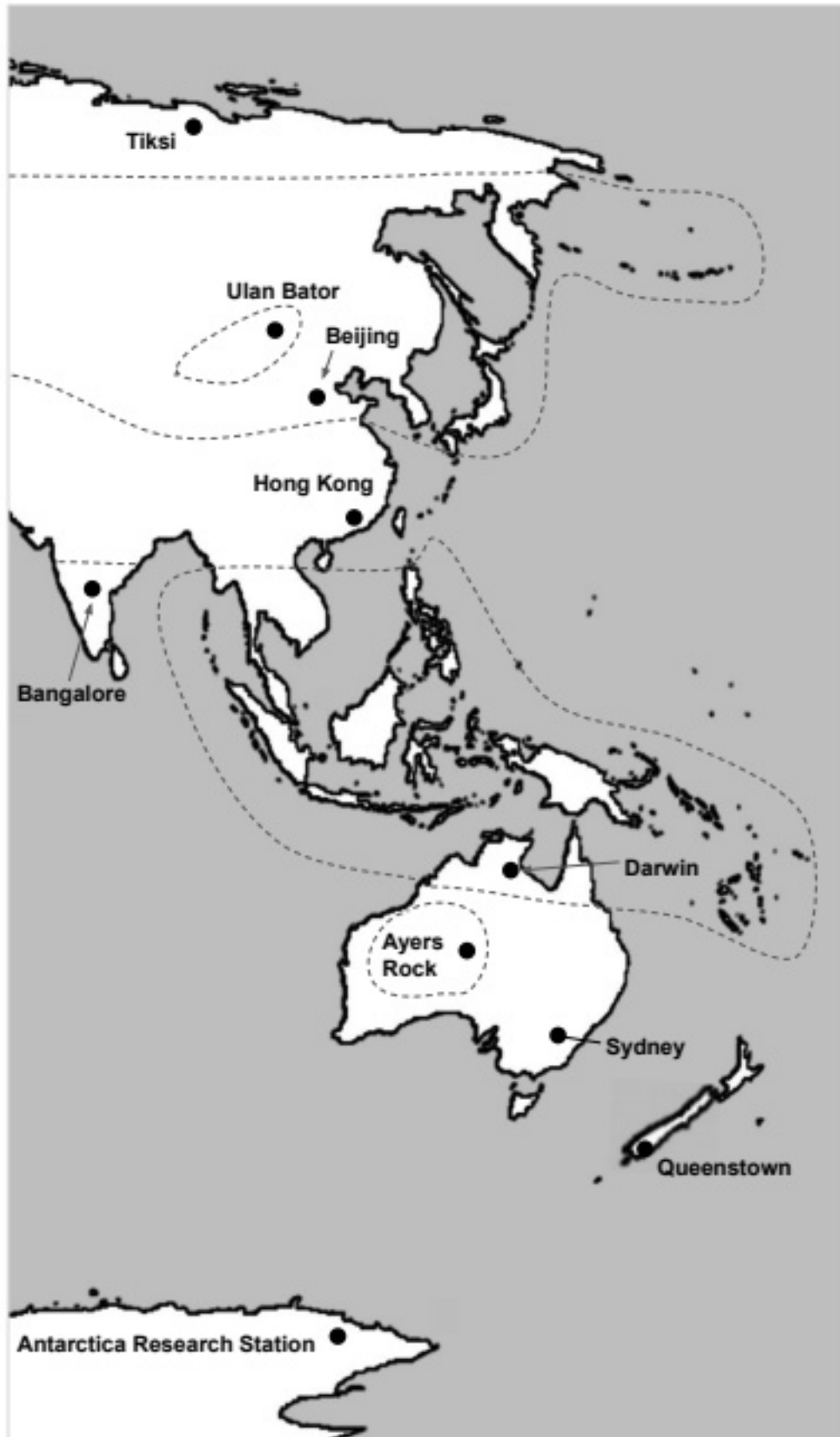
climate
color

Note: All temperatures are in Fahrenheit



Climates in Asia & Australia

Name: _____



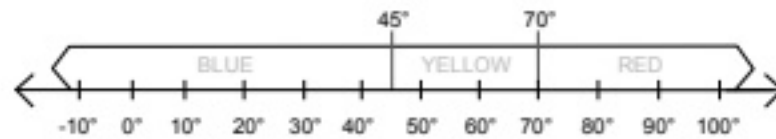
CLIMATE KEY

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- ☐ This climate is hot all year long.

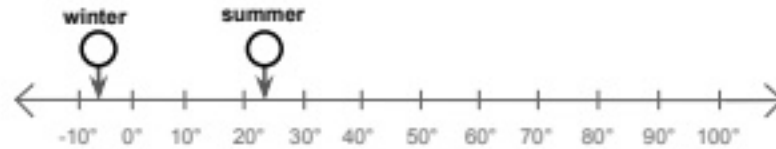
Climates in Asia & Australia (Fahrenheit)

Name: _____

Climate Decoder

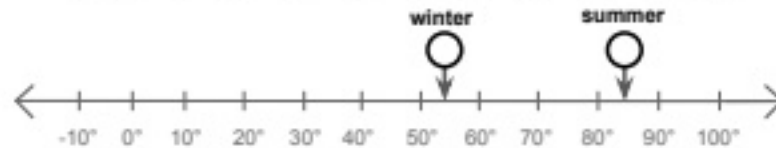


Antarctica Research Station



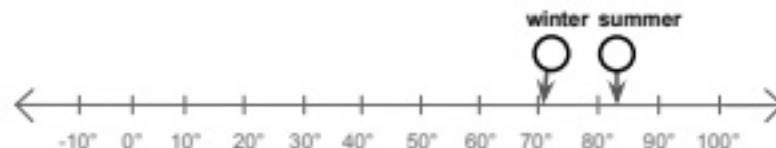
climate
color

Ayers Rock (Uluru), Australia



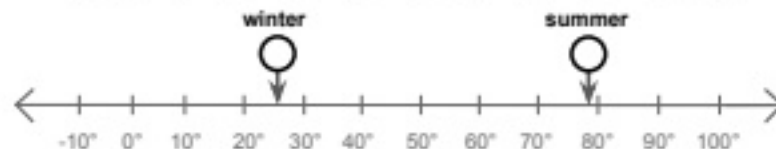
climate
color

Bangalore, India



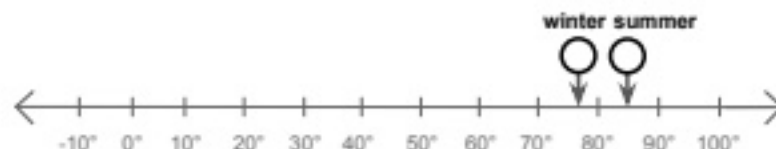
climate
color

Beijing, China



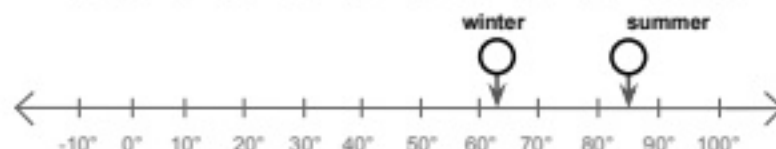
climate
color

Darwin, Australia



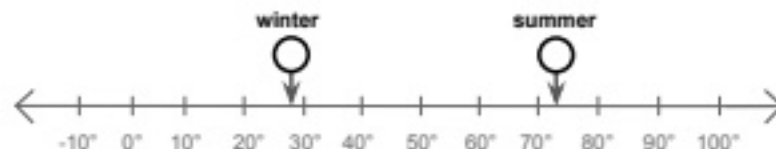
climate
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Hong Kong



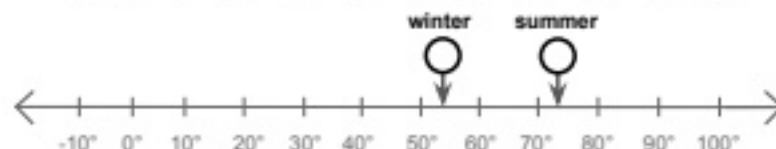
climate
color

Queenstown, New Zealand



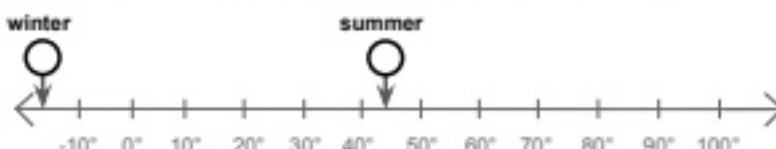
climate
color

Sydney, Australia



climate
color

Tiksi, Russia



climate
color

Ulan Bator, Mongolia



climate
color

Note: All temperatures are in Fahrenheit



Stormy Skies

Mystery 3: Why are some places always hot?

Name: _____

Date: _____

End of Mystery Assessment

1. If you met someone from another country, what questions would you ask to figure out what climate he or she is from?

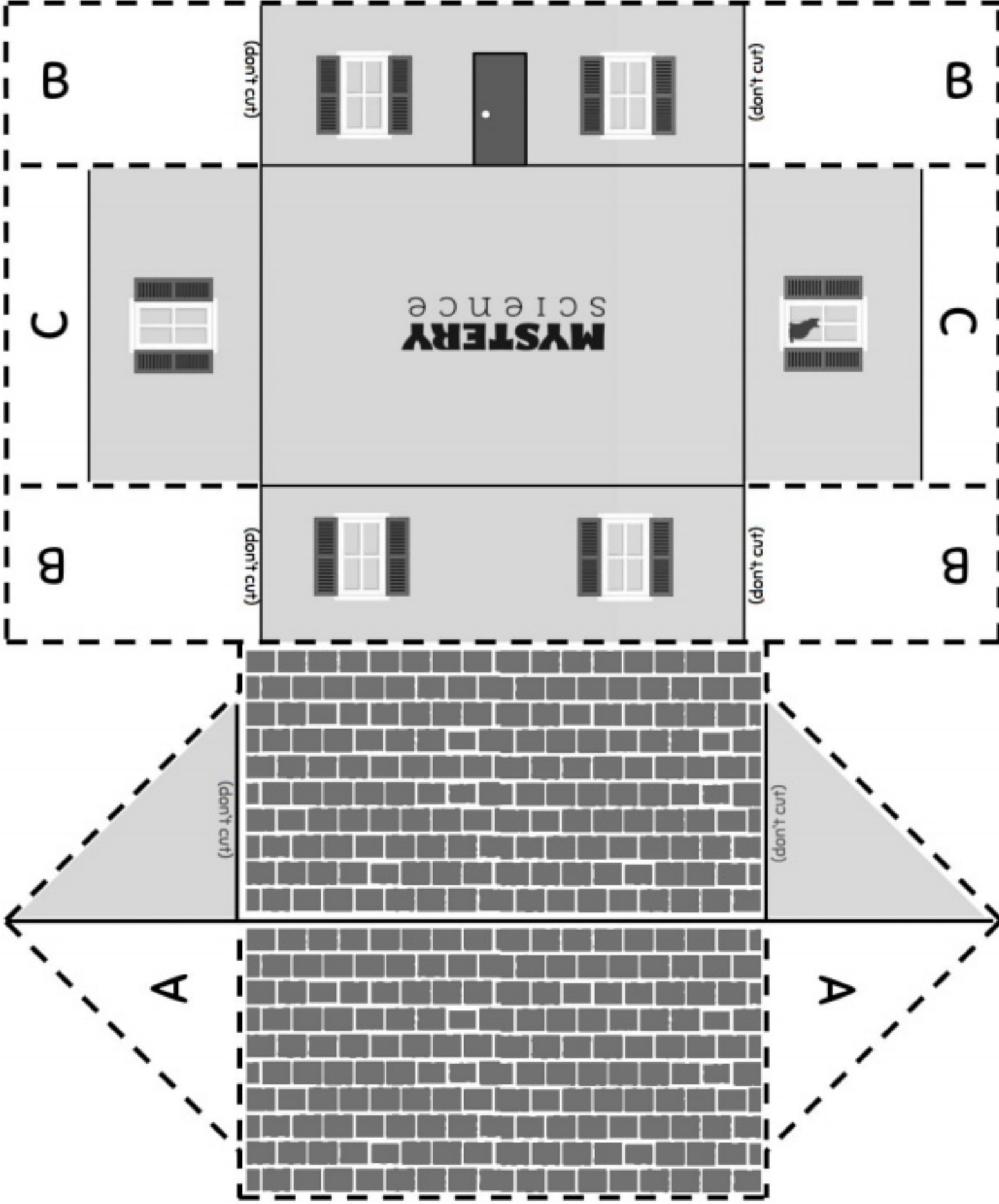
2. Chantal loves warm weather and enjoys hiking in lush, green forests. What climate or climates would you suggest she visit for her vacation? Why?



3. Why is it so much hotter near the equator than at the poles?



Paper House Model



1	1	2
1	1	2
3	3	4
3	3	4
5	5	6
5	5	6
7	7	8
7	7	8
8	8	8

Wind Maker

paperclip

Your name: _____ Partner's name: _____

Design a Windproof House



1. WHAT'S THE PROBLEM?

The problem with our house is _____

(describe what you noticed when testing your house)

Why does it matter? Why is it important to fix it? _____

2. CREATE AND TEST YOUR FIRST DESIGN.

Design #1: Draw your design.



What happened when you tested

Design #1? _____

Your name: _____ Partner's name: _____

3. CREATE AND TEST YOUR SECOND DESIGN.

Design #2: Draw your design.



What happened when you tested

Design #2? _____

4. WHICH DESIGN WORKED BETTER AND WHY?

Which one was easiest to build? Which one used the fewest materials? Which one do you think would last the longest?

Design #1 / Design #2 (choose one) worked best because _____

Stormy Skies

Name: _____

Date: _____

Mystery 4: How can you keep a house from
blowing away in a windstorm?

End of Mystery Assessment

1. a) What do hurricanes, tornadoes, and dust storms have **in common**?

b) How are hurricanes, tornadoes, and dust storms **different**?

2. Reflect on your Wind-Proof House:

A. What problem were you trying to solve?

B. How did you test your designs to see whether they worked or not?

C. Engineers are always working to improve their designs. How could you improve your best design? What else would you try?

D. Engineers often work together in teams to share ideas. Did you and your partner both get to share ideas? How did you work as a team?

Unit Assessment

Multiple Choice

1. How can you tell the difference between a stratus and a stratonimbus cloud?
 - a. A stratus cloud is small and a stratonimbus cloud is very tall.
 - b. A stratonimbus cloud has a lighter color.
 - c. A stratonimbus cloud is darker than a stratus cloud, and causes rain.
 - d. A stratus cloud only covers part of the sky, and a stratonimbus cloud covers the whole sky.
2. Stratonimbus storms usually cause rain all day long because _____.
 - a. the clouds are very wide so they spend a long time over one area.
 - b. there is no hail in stratonimbus storms.
 - c. they turn into cumulus clouds.
 - d. they turn into stratus clouds.
3. Tropical climate zones are very wet and humid because _____.
 - a. the temperature is cold.
 - b. they have many types of plants.
 - c. the Earth travels in a circle around the sun.
 - d. sunbeams shine directly on them, causing more water evaporation and rainfall.

Short Answer

1. Where do clouds come from?

2. Imagine a rain cloud is coming towards you. Choose which kind of rain cloud it's going to be! **Draw** a picture of what you see, then describe your cloud below.

Type of rain cloud: _____

How long will this storm last? _____

3. Which climate is being described below? (temperate, polar, tropical, mild or desert) Write the answer in the blank.

- a) Animals that live here have blubber or thick fur: _____
- b) Trees lose their leaves in the autumn: _____
- c) Many animals hibernate in winter, come back out in springtime: _____
- d) It's hot in December and in June: _____
- e) Animals that live here don't pant to cool off, otherwise they would lose water: _____
- f) It's cold in December and in June: _____
- g) It doesn't rain here very much, ever: _____
- h) Winters here are nice and warm, but not hot: _____

4. Scientists have discovered a new species of dog. It has very large ears and a small mouth, and it doesn't pant with its mouth open like other dogs. What climate do you think this dog could be from? Explain.
