

Third Grade **Science**, Spring 2021

**MYSTERY**science

# *Stormy Skies*

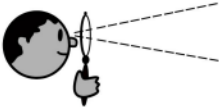


STUDENT  
PACKET





# See-Think-Wonder Chart

Name: \_\_\_\_\_

<p><b>See</b></p> <p>What did you observe?</p> 	<p><b>Think</b></p> <p>How can you explain what is happening?</p> 	<p><b>Wonder</b></p> <p>What questions do you have?</p> 

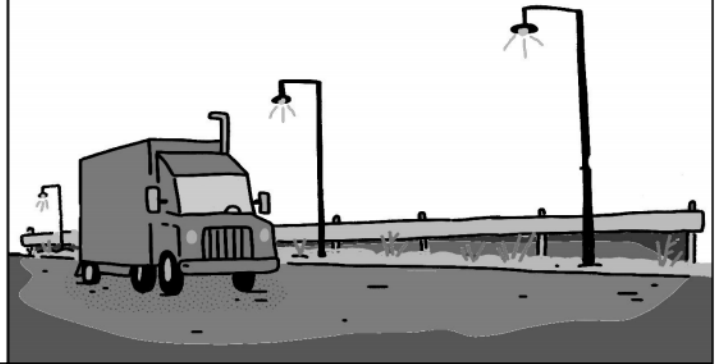
# Summer Ice Storm

Name: \_\_\_\_\_

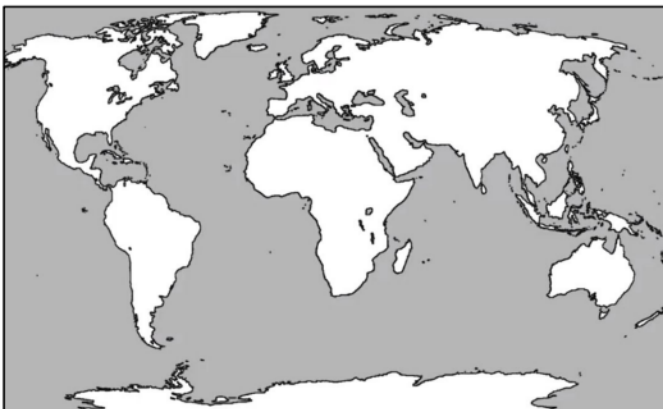
Use this space to **write** what you think might have caused the summer ice storm and any other important things you learn.

[illegible]

Use this space to **draw** what you think might have caused the summer ice storm and any other important things you learn. Label your drawing with words if it is helpful.



## World Map



### Regional Map



# Summer Ice Storm - Hail Protection

Name: \_\_\_\_\_

Can you design a device that will save cars and trucks from hail damage?

It must do three things:

- Protect cars or trucks in a hailstorm.
- Fold up so it can fit inside a car or truck.
- Be lightweight so people can easily set it up.

**Draw Your Device:**

**Describe your device and explain how it works:** \_\_\_\_\_

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**Name your device:** \_\_\_\_\_



# GAS TRAP

Name: \_\_\_\_\_

**MYSTERY**  
science  
Stormy Skies | Mystery 1

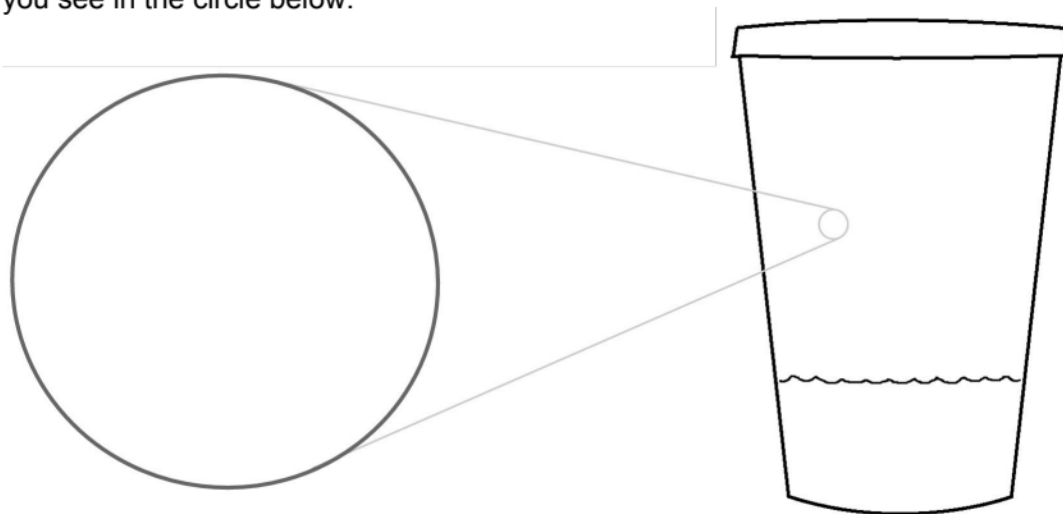
1. Before you begin the experiment, try reading your GAS TRAP TESTER through your cup. What's the last line you can read? Write it here:

\_\_\_\_\_

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:



## Gas Trap Tester



**Can you read  
all these words  
through your cup?**

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

**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?

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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 \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

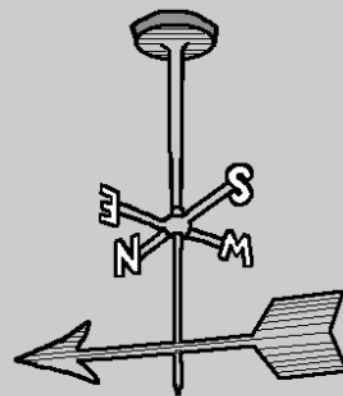
# The STORM Spotter's Guide

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"/> Stratonimbus	

- Write down the city you live in: \_\_\_\_\_
- From what direction does the wind *usually* blow there? \_\_\_\_\_
- So, to see the weather coming my way, I can look toward: \_\_\_\_\_



**Is that storm cloud heading your way?**  
Check the wind to find out!

\_\_\_\_\_ cloud



- Nice weather—no storm

But this cloud can change!  
(See next page)

\_\_\_\_\_ nimbus cloud



- Brings rain and lightning
- Storm lasts under an hour

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

\_\_\_\_\_ cloud



- Gloomy skies—but no storm

But this cloud can change!  
(See next page)

\_\_\_\_\_ nimbus cloud



- Brings rain
- Storm can last all day

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



# 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?

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## 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?

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# 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   stratonimbus

What clouds are in the distance?

cumulus   cumulonimbus   stratus   stratonimbus

What kind of clouds are coming your way?

cumulus   cumulonimbus   stratus   stratonimbus

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?

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# 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?

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

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# Climates in the Americas

Name: \_\_\_\_\_



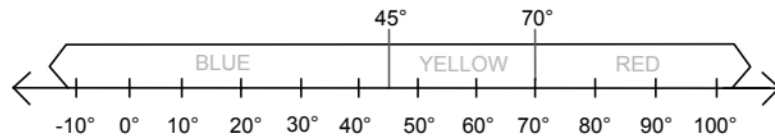
## CLIMATE KEY

- ☐ 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.

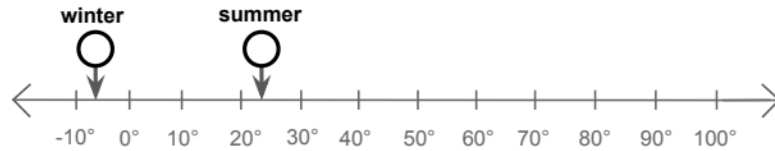
# Climates in the Americas (Fahrenheit)

Name: \_\_\_\_\_

## Climate Decoder

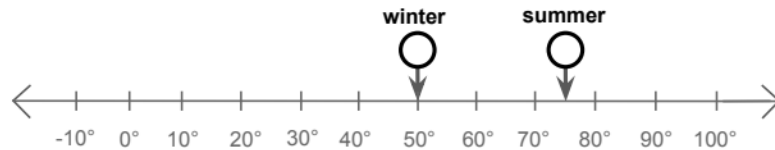


**Antarctica Research Station**



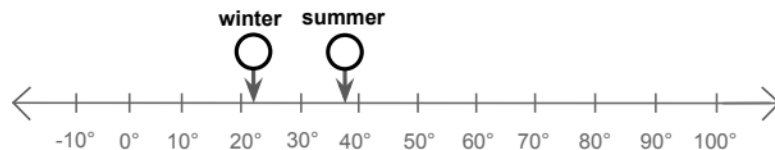
climate  
color

**Atlanta, Georgia, USA**



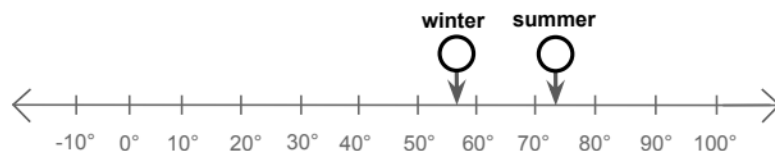
climate  
color

**Utqiagvik, Alaska, USA**



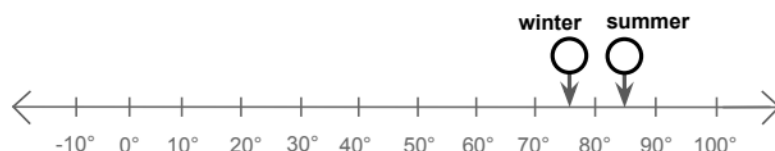
climate  
color

**Buenos Aires, Argentina**



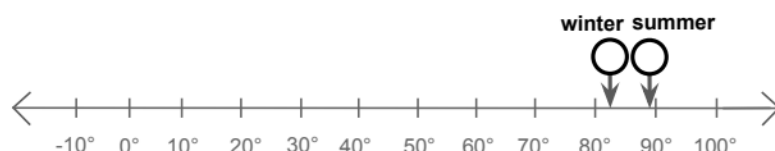
climate  
color

**Cancun, Mexico:**



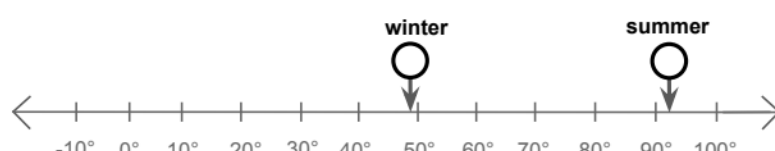
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color

**Georgetown, Guyana**



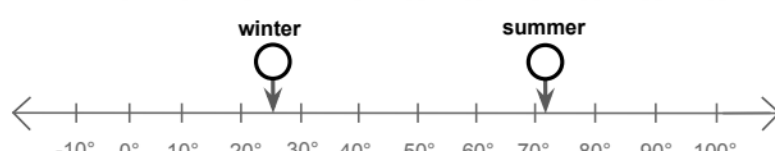
climate  
color

**Las Vegas, Nevada, USA**



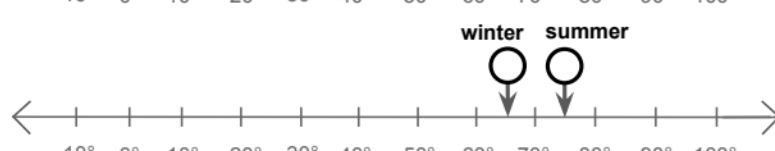
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color

**Perito Moreno, Argentina**



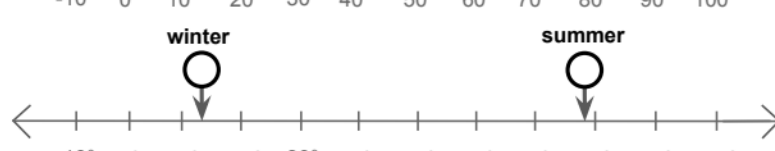
climate  
color

**Tacna, Peru**



climate  
color

**Winnipeg, Canada**



climate  
color

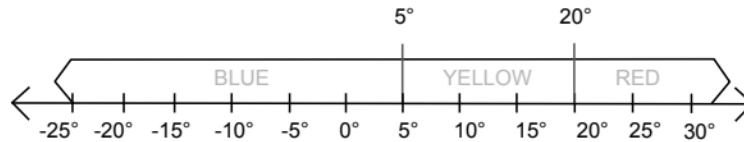
Note: All temperatures are in Fahrenheit



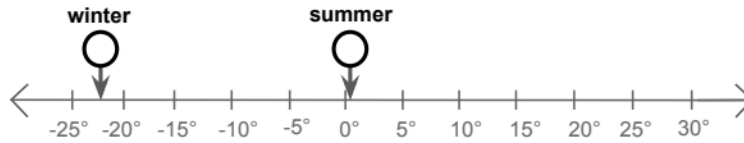
# Climates in the Americas (Celsius)

Name: \_\_\_\_\_

## Climate Decoder

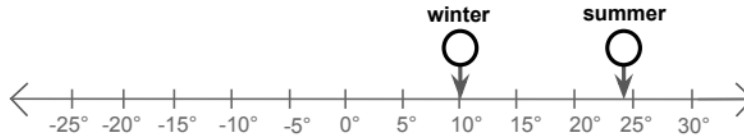


**Antarctica Research Station**



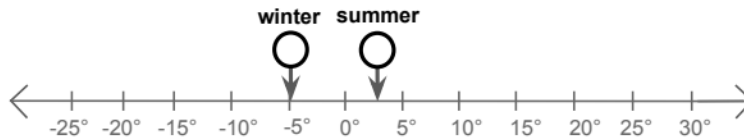
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color

**Atlanta, Georgia, USA**



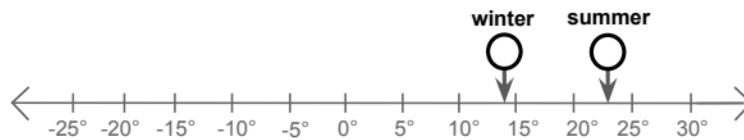
climate  
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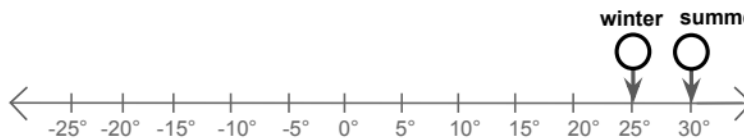
climate  
color

**Buenos Aires, Argentina**



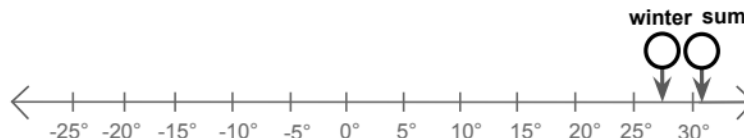
climate  
color

**Cancun, Mexico**



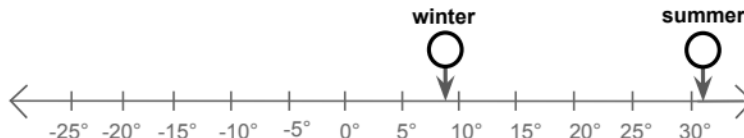
climate  
color

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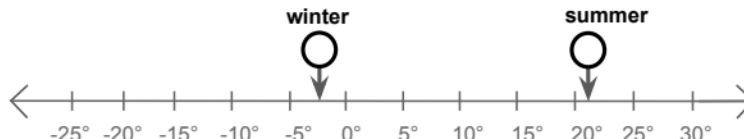
climate  
color

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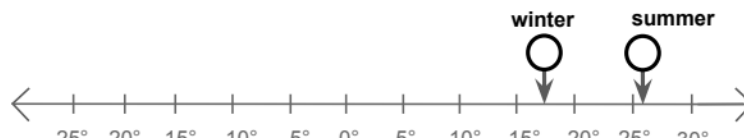
climate  
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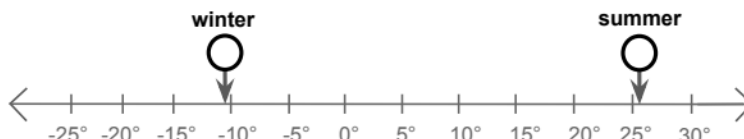
climate  
color

**Tacna, Peru**



climate  
color

**Winnipeg, Canada**



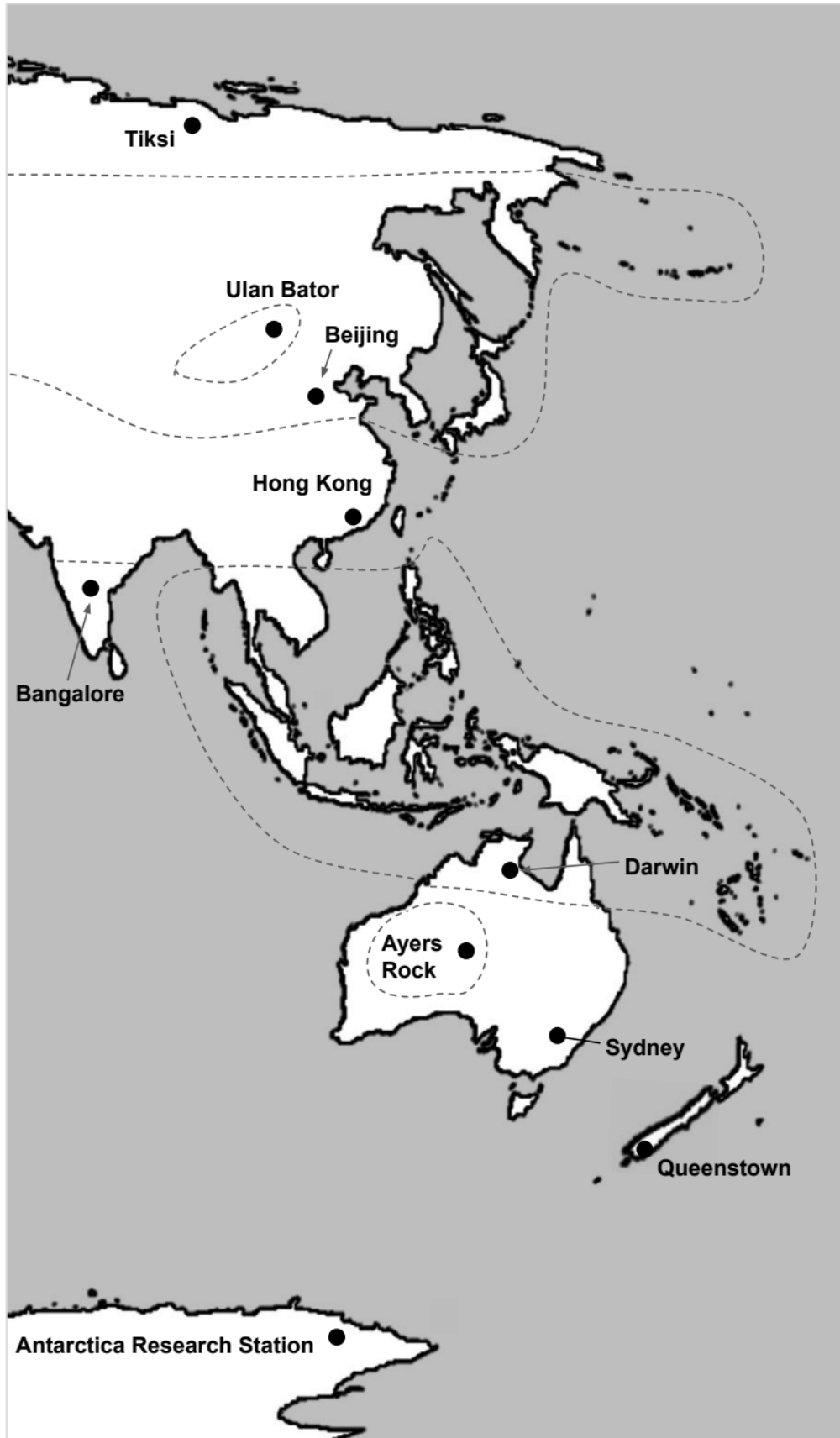
climate  
color

Note: All temperatures are in Celsius



# Climates in Asia & Australia

Name: \_\_\_\_\_



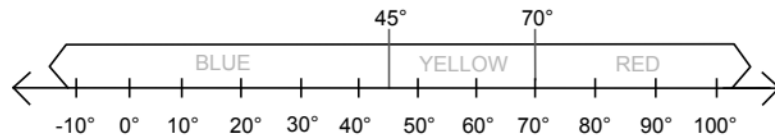
## CLIMATE KEY

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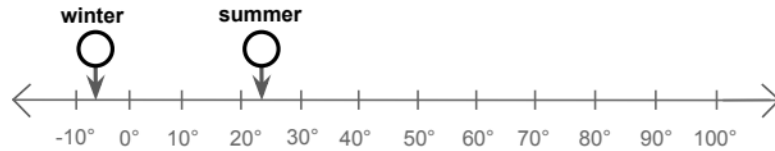
# Climates in Asia & Australia (Fahrenheit)

Name: \_\_\_\_\_

## Climate Decoder

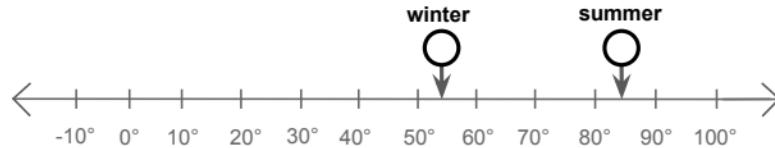


**Antarctica Research Station**



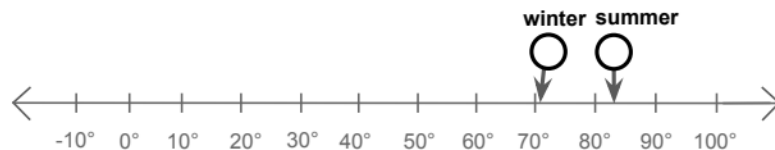
climate  
color

**Ayers Rock (Uluru), Australia**



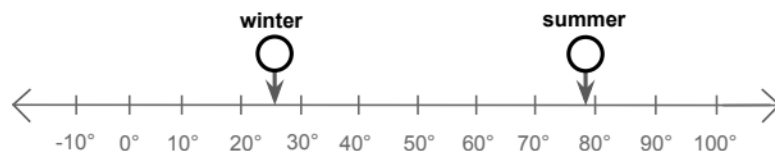
climate  
color

**Bangalore, India**



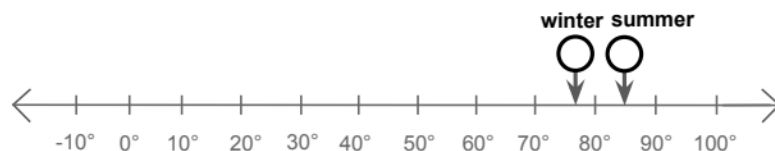
climate  
color

**Beijing, China**



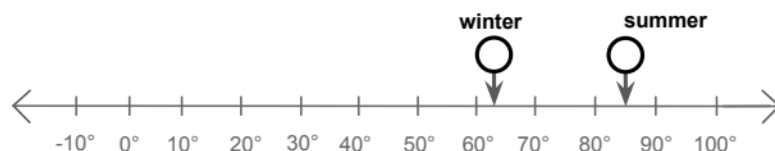
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**Darwin, Australia**



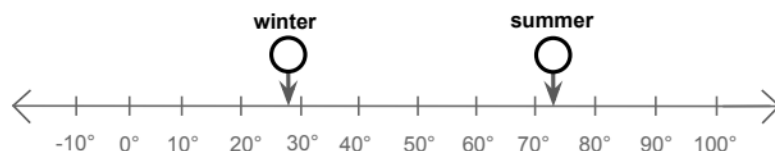
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**Hong Kong**



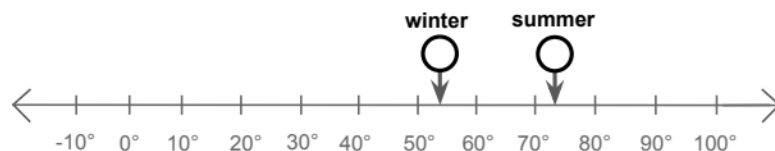
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**Queenstown, New Zealand**



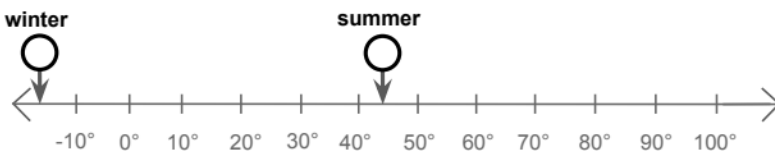
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**Sydney, Australia**



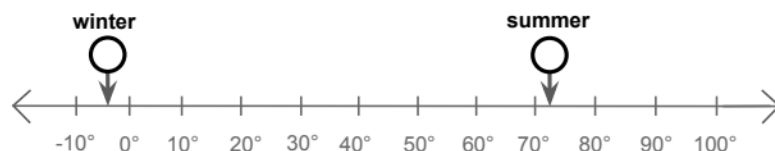
climate  
color

**Tiksi, Russia**



climate  
color

**Ulan Bator, Mongolia**



climate  
color

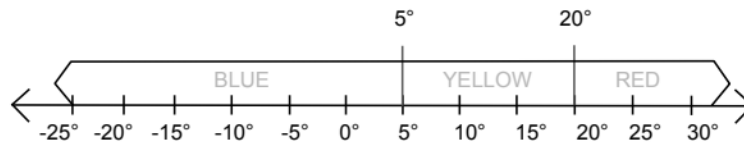
Note: All temperatures are in Fahrenheit



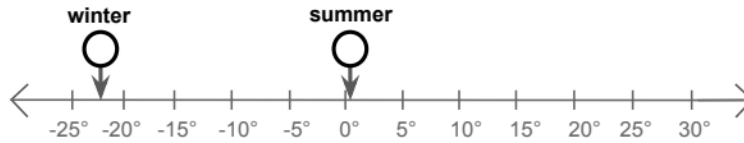
# Climates in Asia & Australia (Celsius)

Name: \_\_\_\_\_

## Climate Decoder

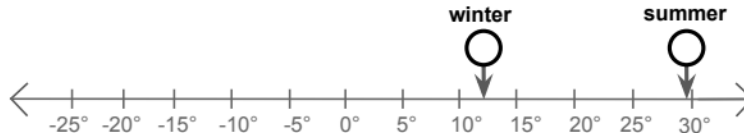


**Antarctica Research Station**



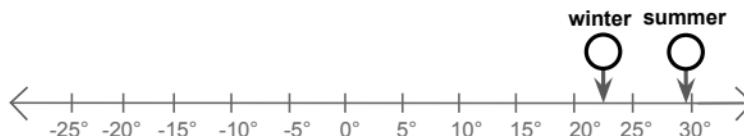
climate  
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**Ayers Rock (Uluru), Australia**



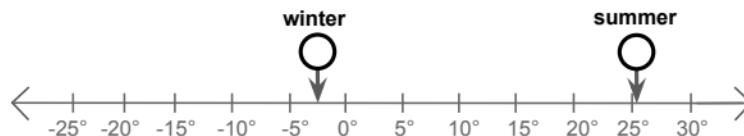
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**Bangalore, India**



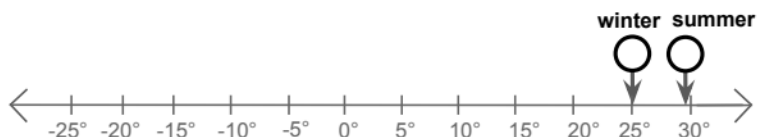
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**Beijing, China**



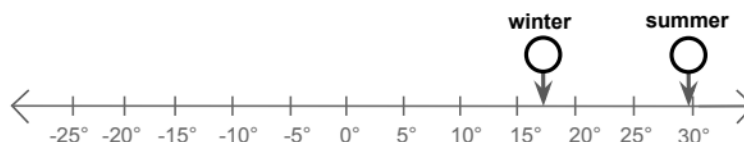
climate  
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**Darwin, Australia**



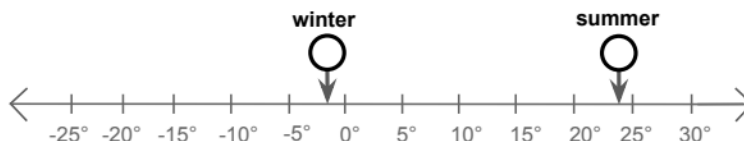
climate  
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**Hong Kong**



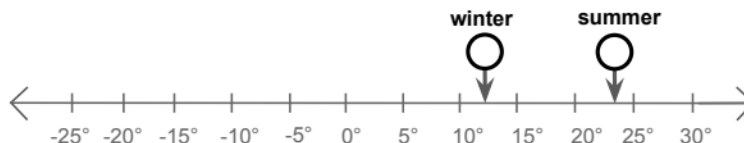
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**Queenstown, New Zealand**



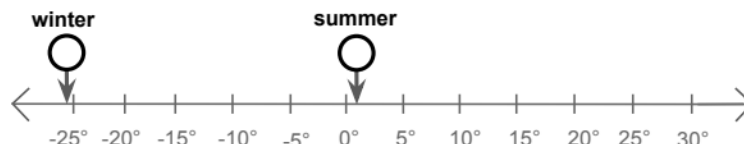
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**Sydney, Australia**



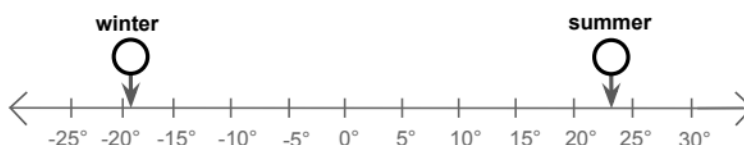
climate  
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**Tiksi, Russia**



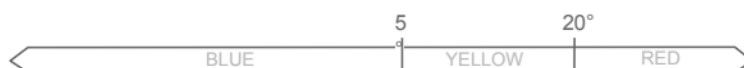
climate  
color

**Ulan Bator, Mongolia**



climate  
color

Note: All temperatures are in Celsius



# Climates in Europe & Africa

Name: \_\_\_\_\_



## CLIMATE KEY

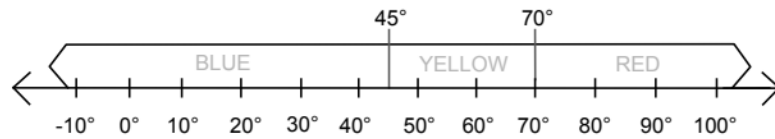
- ☐ This climate is cold all year long.
- ☐ This climate has cold winters and hot summers.
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- ☐ This climate is hot all year long.



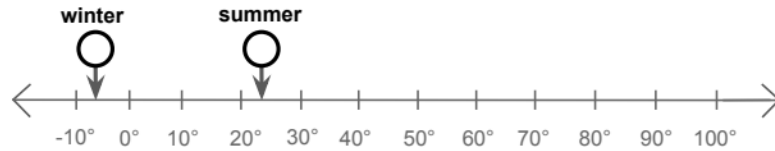
# Climates in Europe & Africa (Fahrenheit)

Name: \_\_\_\_\_

## Climate Decoder

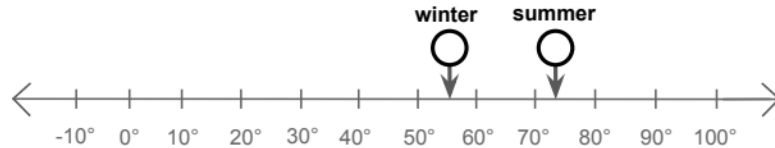


**Antarctica Research Station**



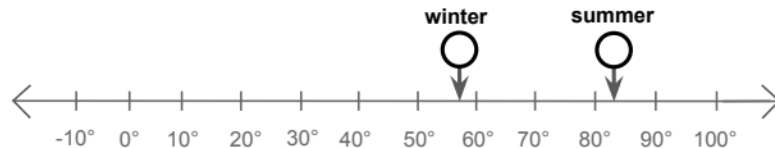
climate  
color

**Casablanca, Morocco**



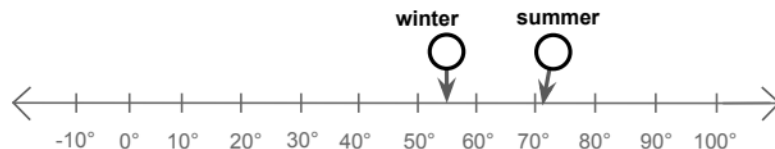
climate  
color

**Cairo, Egypt**



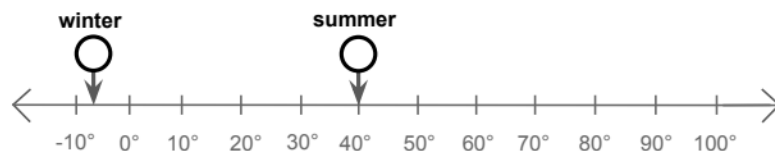
climate  
color

**Cape Town, South Africa**



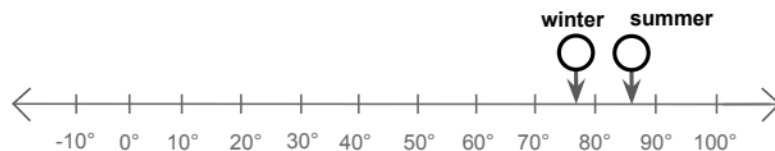
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color

**Daneborg, Greenland**



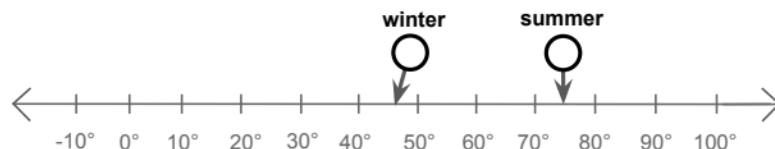
climate  
color

**Juba, South Sudan**



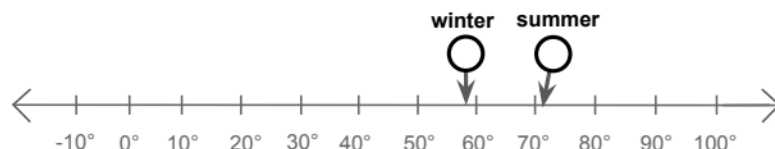
climate  
color

**Rome, Italy**



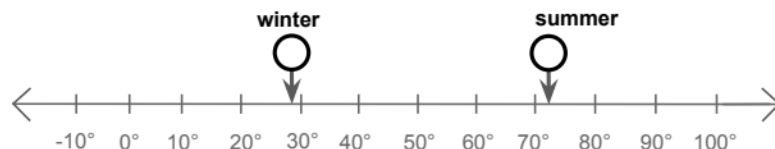
climate  
color

**The island of Madagascar**



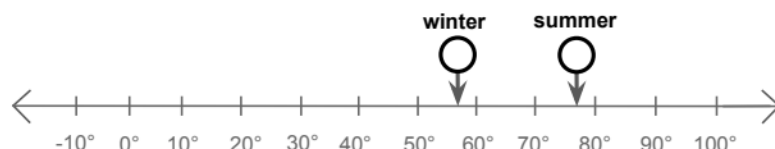
climate  
color

**Warsaw, Poland**



climate  
color

**Windhoek, Namibia**



climate  
color

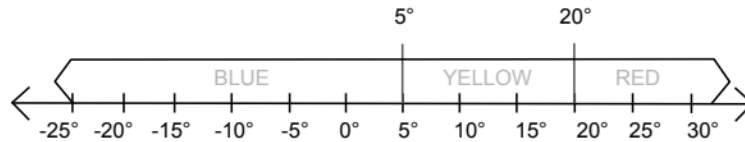
Note: All temperatures are in Fahrenheit



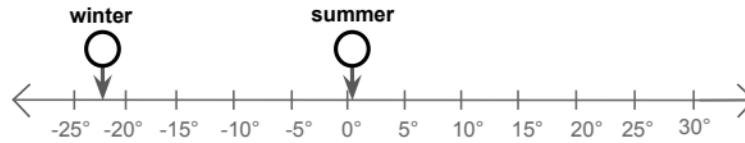
# Climates in Europe & Africa (Celsius)

Name: \_\_\_\_\_

## Climate Decoder

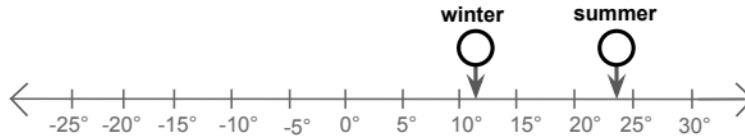


**Antarctica Research Station**



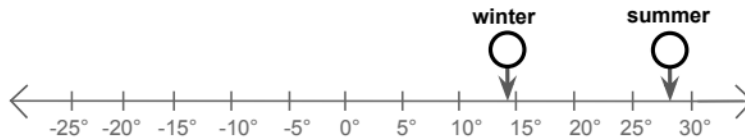
climate  
color

**Casablanca, Morocco**



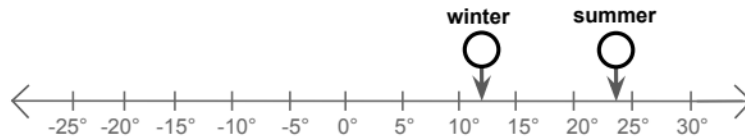
climate  
color

**Cairo, Egypt**



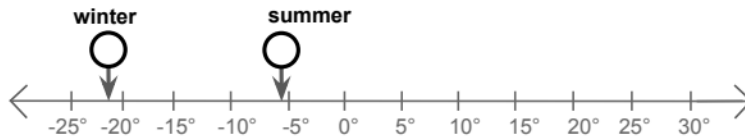
climate  
color

**Cape Town, South Africa**



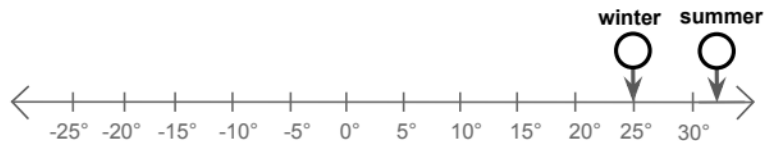
climate  
color

**Daneborg, Greenland**



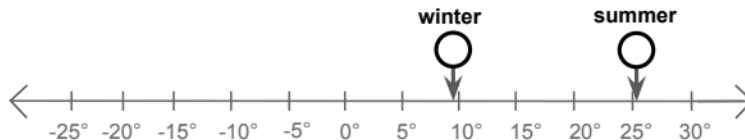
climate  
color

**Juba, South Sudan**



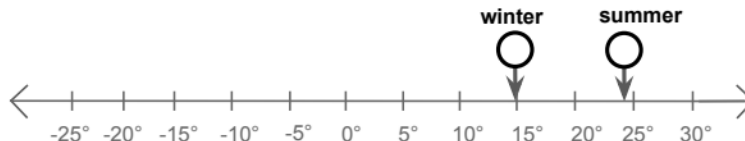
climate  
color

**Rome, Italy**



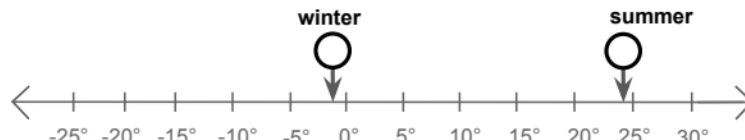
climate  
color

**The island of Madagascar**



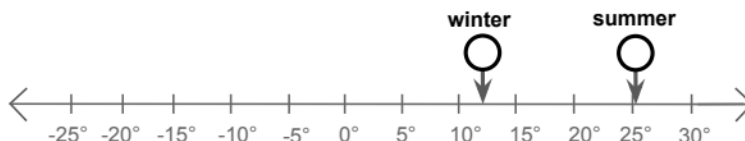
climate  
color

**Warsaw, Poland**



climate  
color

**Windhoek, Namibia**



climate  
color

Note: All temperatures are in Celsius



# 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?

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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?



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



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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

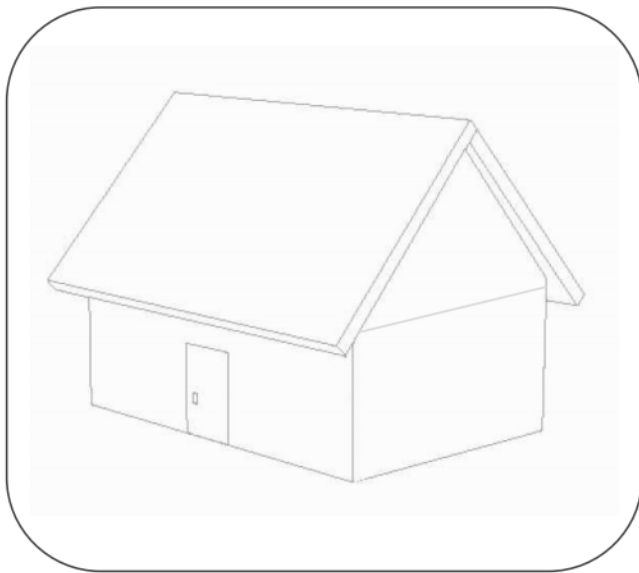
Design #1? \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Your name: \_\_\_\_\_ Partner's name: \_\_\_\_\_

### 3. CREATE AND TEST YOUR SECOND DESIGN.

**Design #2:** Draw your design.



What happened when you tested

Design #2? \_\_\_\_\_

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### 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 \_\_\_\_\_

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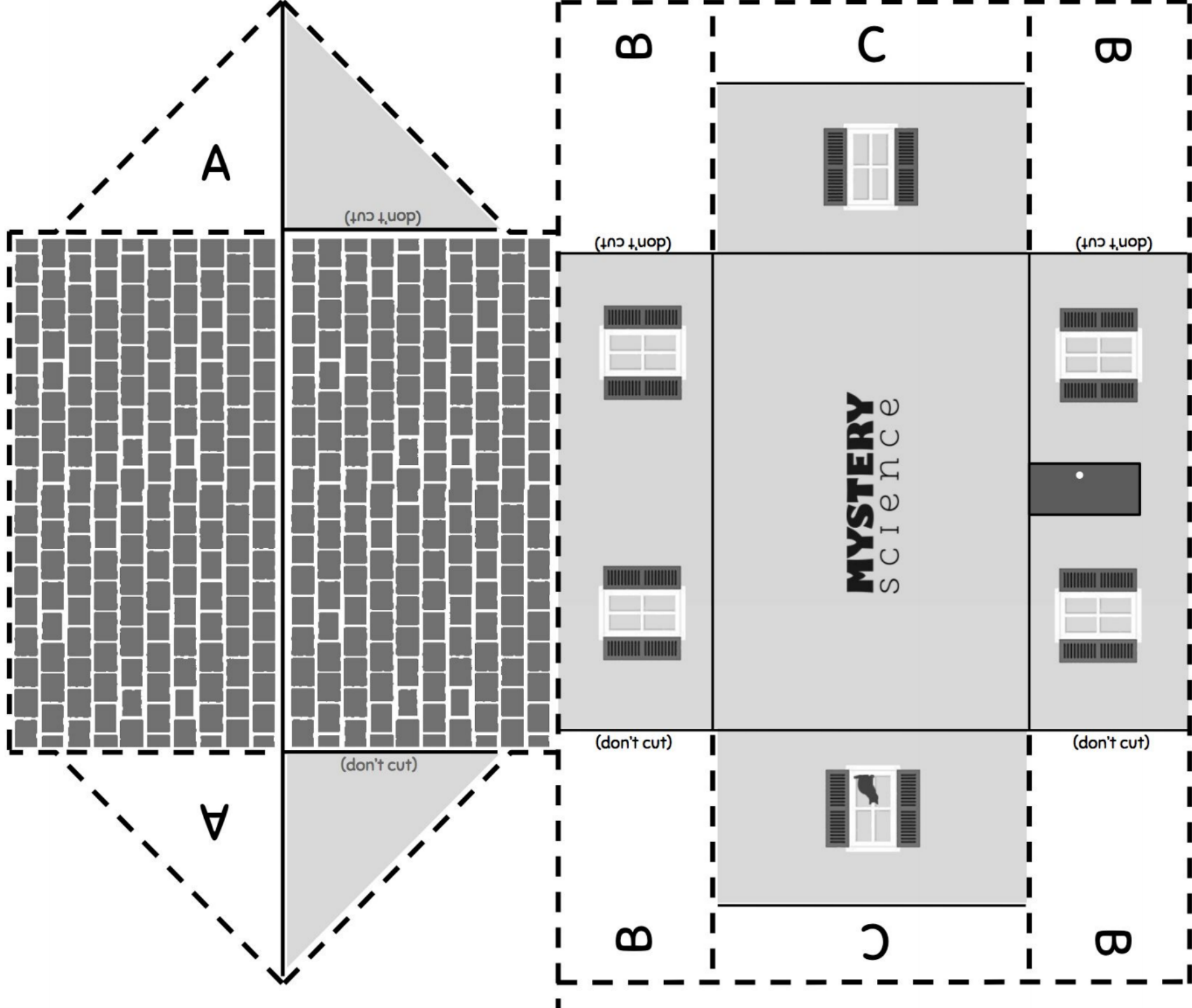
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# Paper House Model







# Wind Maker

paperclip

7

7

5

5

3

3

1

1

8

8

6

6

4

4

2

2



## Future Hailstorm Prediction



**Directions:** Use the hailstorm data from last year to make predictions for next year.

1. Use the hailstorm data you studied to make a prediction for next year. In which two seasons and in which zone do you think your design will be needed the most?

***Next year, I think my design will be needed the most during the seasons of \_\_\_\_\_ and \_\_\_\_\_, and in zone \_\_\_\_.***

2. Why do you think your design will be needed most in that zone during those seasons? Be sure to use data in your answer!

***I think this because last year, \_\_\_\_\_***  
\_\_\_\_\_  
\_\_\_\_\_.

3. In which season and in which zone do you think your design will be needed the **least**? Why?

***I think my design will be needed the least in the season of \_\_\_\_\_***  
***and zone \_\_\_\_ because \_\_\_\_\_***  
\_\_\_\_\_  
\_\_\_\_\_.

Stormy Skies  
Performance Task

Name: \_\_\_\_\_

Spring 2018 Hailstorm Data

**Introduction:** We split the country up into four zones. Look at the map below to see how we did it.

The bar graphs show how many major hailstorms happened in each zone.

This is only data from **March, April, and May** of 2018. These are the months of **spring**. You’re going to be the expert on hailstorms in the spring!

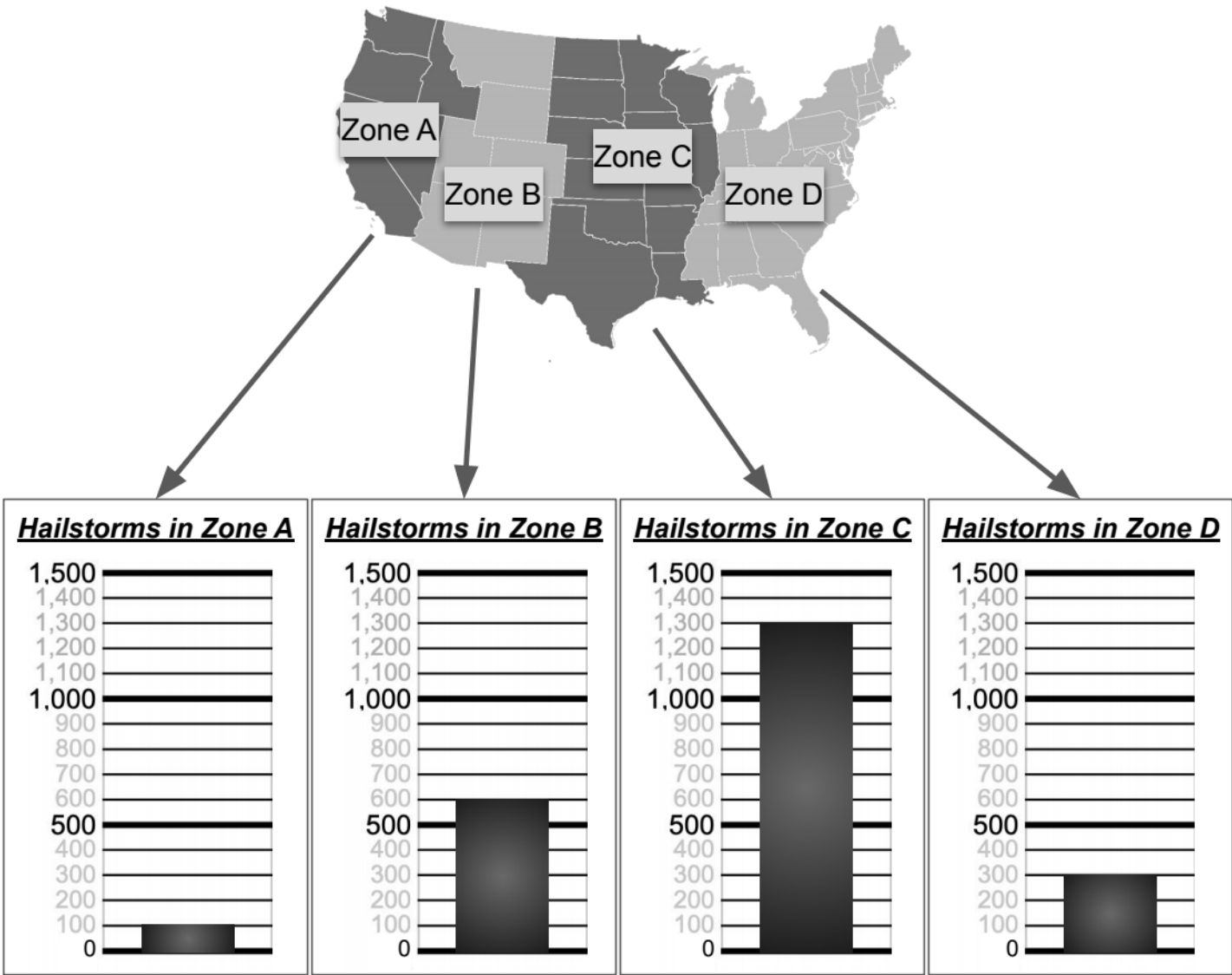


Summer 2018 Hailstorm Data

**Introduction:** We split the country up into four zones. Look at the map below to see how we did it.

The bar graphs show how many major hailstorms happened in each zone.

This is only data from **June, July, and August** of 2018. These are the months of **summer**. You’re going to be the expert on hailstorms in the summer!



Stormy Skies  
Performance Task

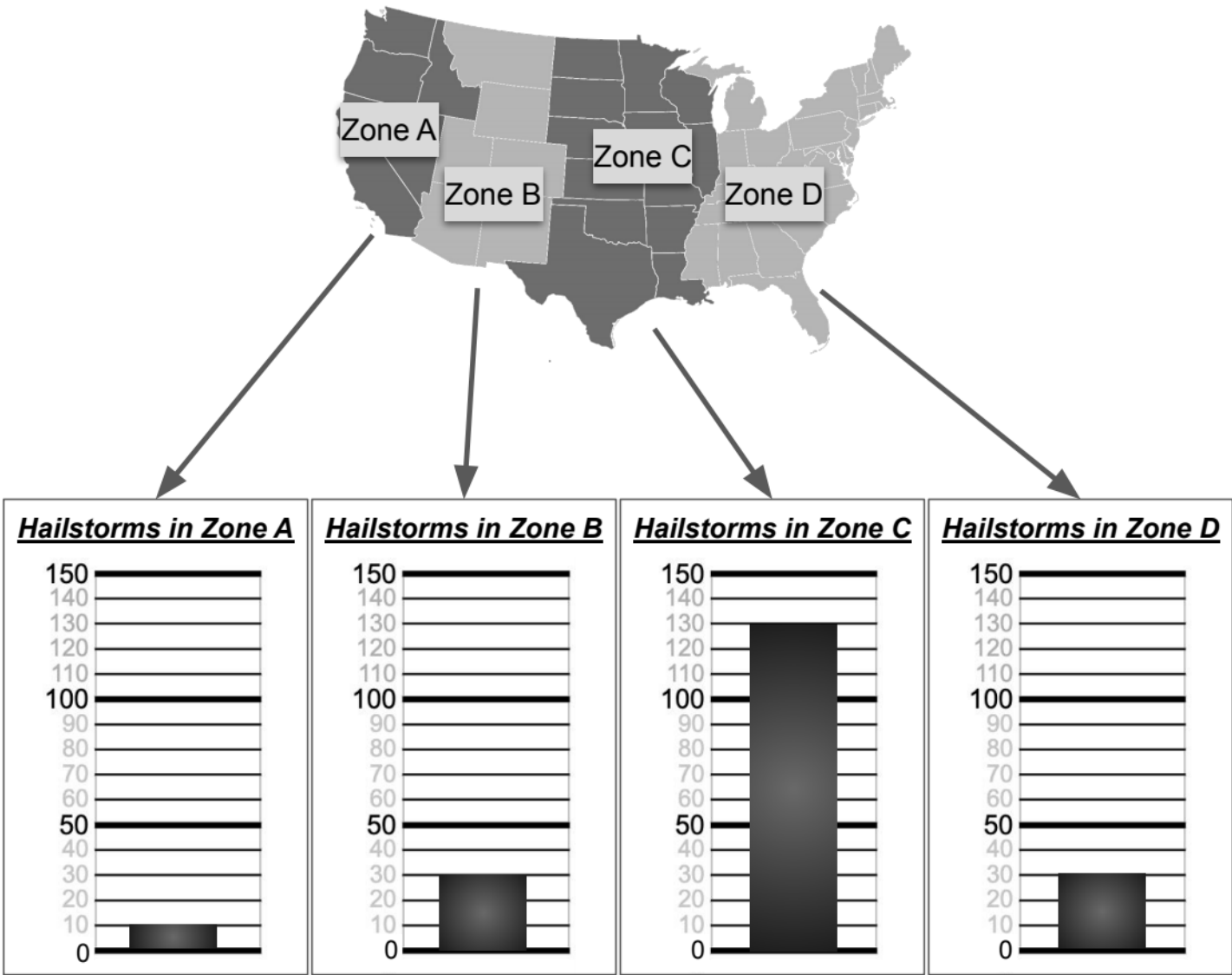
Name: \_\_\_\_\_

Fall 2018 Hailstorm Data

**Introduction:** We split the country up into four zones. Look at the map below to see how we did it.

The bar graphs show how many major hailstorms happened in each zone.

This is only data from **September, October, and November** of 2018. These are the months of **fall**. You're going to be the expert on hailstorms in the fall!

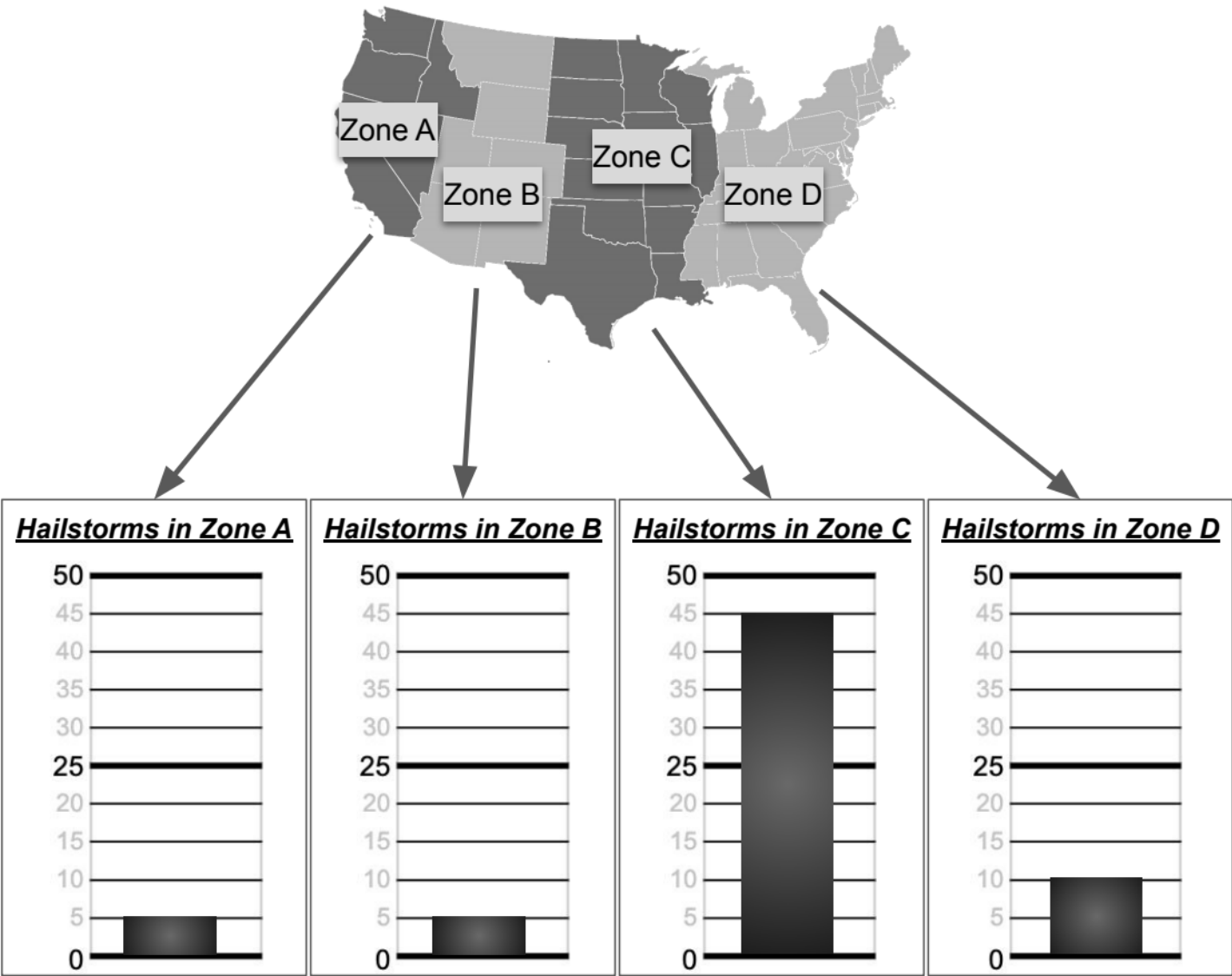


Winter 2018 Hailstorm Data

**Introduction:** We split the country up into four zones. Look at the map below to see how we did it.

The bar graphs show how many major hailstorms happened in each zone.

This is only data from **January, February, and December** of 2018. These are the months of **winter**. You’re going to be the expert on hailstorms in the winter!



# Stormy Skies

## Performance Task

Name: \_\_\_\_\_

### Past Hailstorm Patterns

**Directions:** Study your graphs to become an expert on one season. Then, answer these questions.

1. Which season is your data from? \_\_\_\_\_
2. Complete this table for your season.

	Zone A	Zone B	Zone C	Zone D
Number of Hailstorms				

3. Zone with the most hailstorms: \_\_\_\_\_ Zone with the fewest hailstorms: \_\_\_\_\_
4. How many more hailstorms fell in zone C than in zone A? \_\_\_\_\_

Now, talk with the people that studied the **other** seasons from 2018.

5. Look at all of the data from every season. Where and when are the **fewest** hailstorms? Zones \_\_\_\_\_ in the season of \_\_\_\_\_
6. Complete this table for each season in **zone C**.

	Spring	Summer	Fall	Winter
Number of Hailstorms in Zone C				

7. In zone C, how many **more** hailstorms happened in spring and summer combined than in fall and winter combined? \_\_\_\_\_



## 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?

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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.

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