

# Online Learning Lessons for 6<sup>th</sup> Grade

**Directions:** Please complete the following work below for each subject. This work will count toward your final grade and must be complete to get credit for attendance.

Student Name \_\_\_\_\_ FOR **4/22/2020**

## ELA

**Khan Academy Storytelling:** Watch the 'Your favorite stories' video, complete Activity 2, then watch 'What if' and complete Activity 3.

**Parent Initials:** \_\_\_\_\_

## Math

**All Math Classes:** Desmos "Collect the Coconuts" Distance in the Coordinate Plane Activity  
Go to student.desmos.com and type in the code V5W ZFT then continue without signing in. Put your first name and last initial. Then begin the activity about distance on the Coordinate Plane. Please let me know if you have questions. (If you have internet access, I highly recommend doing this activity online; paper copy also attached.)

**Parent Initials:** \_\_\_\_\_

## Science

### Inner Planets

**Parent Initials:** \_\_\_\_\_

## History/Social Studies

### None

**Parent Initials:** \_\_\_\_\_

**Parent Signature:** \_\_\_\_\_

If you have questions, please email your teacher.

Thank you!

Ms. Cook jcook@mcusd1.net

Ms. Couch scouch@mcusd1.net

Mr. Drenth rdrenth@mcusd1.net

Ms. McDermott smcdermott@mcusd1.net

**Teacher Hours:**  
**9:00 am - 11:30 am**  
**12:30 pm - 2:30 pm**





**Introduction**

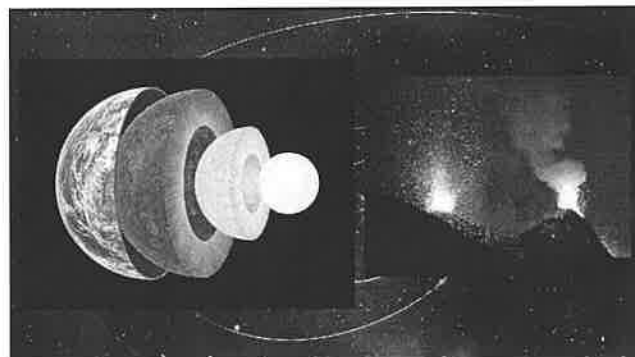
- Imagine this: a planet so hot its surface can melt lead, a planet with storms that can last for centuries, a planet that hosts trillions of life forms, and a planet that is completely stripped of its atmosphere.
- These are all descriptions of our solar systems innermost planets that are inside of the asteroid belt.
- Earth along with Venus, Mars, and Mercury are terrestrial planets which means that they have a solid surface.

**A Quick Look**

Planet	Diameter (Miles)	Period of Rotation (Earth Days)	Distance from the Sun (Miles)	Period of Revolution (Earth Years)	Number of Moons
Mercury	3,032	59	35.98 million	0.24	0
Venus	7,520.8	243	67.24 million	0.62	0
Earth	7,917.5	1	92.96 million	1	1
Mars	4,212	1.03	141.6 million	1.9	2

**Earth**

- Earth is the place that we call home and it is unique among our inner planets.
- The Earth has three layers: the core, the mantle, and the crust.
- The core is made of extremely dense iron.
- The mantle is made of molten rock which sometimes rises through the crust in the form of magma in a volcanic eruption.



**Water**

- The Earth is the only known planet in our solar system to have liquid water on its surface.
- 70% of our planet's surface is water.
- Water can exist as a solid, gas, or liquid on our planet.
- Water is also responsible for changing Earth's appearance over time as it erodes our land and deposits new sediment in other areas.

## Atmosphere

- Earth's gravity is strong enough to hold in most gases.
- Other planets have atmospheres too, but only Earth's is rich in oxygen which makes up 20% of it.
- A majority of our atmosphere is made of nitrogen which makes it possible for plants to grow.
- The amount of water vapor varies in our atmosphere depending on the region and the time of year.

## Mercury

- Mercury is the smallest planet.
- It is also the closest to the sun.
- Imagine our moon then put mercury right next to it. They would be almost identical in both size and surface appearance.
- Unlike the moon mercury is super heated due to the sun and on its surface you could melt lead.

## Exploring Mercury

- Mercury is very difficult to see because of its proximity to the sun.
- Most of what we know about mercury came from a space probe named Mariner 10 which flew around Mercury in 1974 and 1975.
- The newest mission MESSENGER flew around Mercury three times in 2008 and 2009. It then orbited alongside the planet in 2011. It had a planned collision with the planet April 30, 2015.
- The surface of Mercury is heavily cratered and has a surface temperature of 840 degrees Fahrenheit.

## Mercury's Atmosphere

- Mercury has virtually no atmosphere because of the sun's damaging radiation.
- Scientists have recently discovered that small amounts of sodium gas stays with the planet which suggests the chance that there may be some form of atmosphere.
- Mercury is extremely hot during the day, but without an atmosphere the heat cannot be held in so at night it can reach -279 degrees Fahrenheit.

## Venus

- When you look up in the evening and see the first star light up after sunset did you know you are actually looking at the planet Venus?
- The planet is known as the "evening star" or "morning star" depending on the time of year.
- Venus is sometimes called Earth's twin because the density and internal structure are the same.
- But Earth and Venus are very different in other ways.

## Venus's Rotation

- Venus takes 7.5 months to revolve around the sun, but it takes 8 months to rotate once on its axis.
- Its day takes longer than its year!
- It also rotates in the opposite direction than other planets.
- Scientists hypothesize that an object collided with Venus that changed its rotation and slowed it down.

### Venus's Atmosphere

- Venus's atmosphere is so thick with sulfuric clouds that we cannot see the surface.
- If you were to step out onto Venus you would be crushed by its atmosphere which is 90 times greater than Earth's.
- Because of this atmosphere it blocks off most of the sun's radiation, but the radiation that does reach the surface is trapped as heat.
- Venus has a super greenhouse effect due to high amounts of carbon dioxide which keeps the surface at 864 degrees Fahrenheit.

### Exploring Venus

- Many probes have visited Venus.
- The first space probe was Verena 1 which landed on the surface, but only survived a few minutes due to high pressure and temperature.
- The latest probe was MESSENGER that performed a flyby maneuver by the planet before its destination with Mercury.
- The space probe Magellan in 1990 was able to radar map 98% of Venus's surface and discovered hundreds of volcanoes.

### Mars

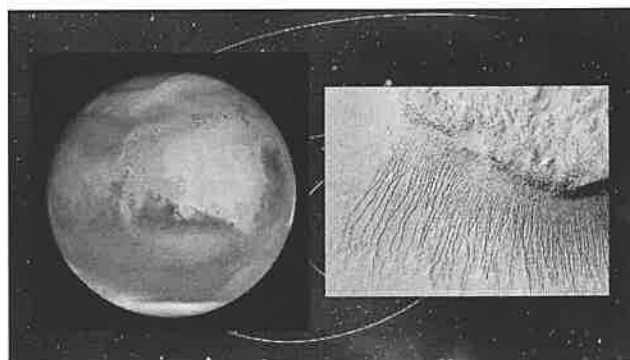
- Mars is known as the "red planet".
- The red is due to an element known as iron which creates the reddish dust along the surface.
- The Orion Space Program is currently testing equipment that could take man to Mars.

### Mars's Atmosphere

- Mars's atmosphere is made up of 95% carbon dioxide which is the same as Venus but the atmosphere of Mars is much thinner.
- You can walk around on Mars, but you would need an airtight suit with oxygen.
- This suit would also have to be insulated because the surface of Mars can be 68 degrees Fahrenheit down to -67 degrees Fahrenheit.

### Water on Mars

- In 1877 Italian astronomer named Giovanni Schiaparelli said that he observed channels on the surface of Mars.
- American astronomer Pervical Lowell convinced citizens that these canals were built by intelligent Martian lifeforms.
- It turns out that there are no canals of water on Mars, but scientists do believe that water once flowed on Mars and it caused these markings.
- Scientists now believe that Mars may have solid water frozen in its ice caps.



### Seasons on Mars

- Mars has a tilted axis just like Earth which means that Mars has seasons similar to Earth.
- When one hemisphere is pointed towards the Earth the frozen carbon dioxide melts so that ice cap recedes. The other ice cap grows because it is pointed away from the sun.
- Mars also has windstorms due to the seasons changing. This is why some areas of Mars look darker than others.
- Scientists in the past thought these were plants, but it was simply the dust blown away.

### Exploring Mars

- Mars is one of the most explored planets and the only one that currently has rovers operating on the surface.
- The Curiosity and Opportunity rovers are still in operation as of October 5, 2016 and will continue their mission.
- Both rovers have found strong evidence that water was once present on the surface of Mars.

### Volcanoes

- Besides trying to find water, we have also discovered that Mars once had giant volcanoes.
- The largest one Olympus Mons is the largest volcano in our solar system
- It covers a region as big as the state of Missouri and is three times taller than Mount Everest!

### Mars's Moons

- The only other inner planet that has a moon besides Earth is Mars.
- Mars has two moons: Phobos and Deimos.
- Phobos is the larger of the moons, but it is still only twenty miles in diameter.
- Deimos is smaller at only twelve miles in diameter.
- Phobos is slowly spiraling towards the planet and scientists believe that it will impact Mars in 40 million years.

### Conclusion

- Our solar system's inner planets are all very unique.
- Mercury has almost no atmosphere and its surface is so hot it could melt lead.
- Venus has a very thick atmosphere with enough pressure to crush you, and one day on Venus is longer than its year.
- Earth is the only planet with liquid water and oxygen in its atmosphere.
- Mars has two moons and rovers are currently looking for signs of water.

Thank you from:



NAME:

DATE:



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## **The Inner Planets**

### **Worksheet**



- 1. Name the four inner planets.**
- 2. How far is Mercury from the sun?**
- 3. The Earth has three layers: the core, the \_\_\_\_\_, and the crust.**
- 4. How much of our planet's surface is water?**
- 5. Compare and contrast the planet Mercury and our moon.**
- 6. Venus takes \_\_\_\_\_ months to revolve around the sun, but it takes \_\_\_\_\_ months to rotate once on its axis.**
- 7. What is the name of the space program that is currently testing equipment that could take man to Mars?**
- 8. Mars's atmosphere is made up of 95% \_\_\_\_\_ which is the same as Venus but the atmosphere of Mars is much thinner.**
- 9. Do scientists believe there is water on Mars? If so where?**

NAME:

DATE:



# The Inner Planets

## Word Search



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

ATMOSPHERE

CORE

CRUST

CURIOSITY

EARTH

MAGELLAN

MANTLE

MARS

MERCURY

MESSENGER

MOONS

OPPORTUNITY

ORION

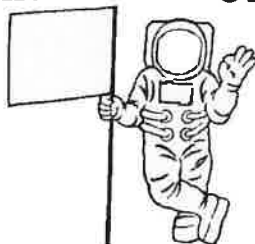
PROBE

ROVER

VENUS

VOLCANOES

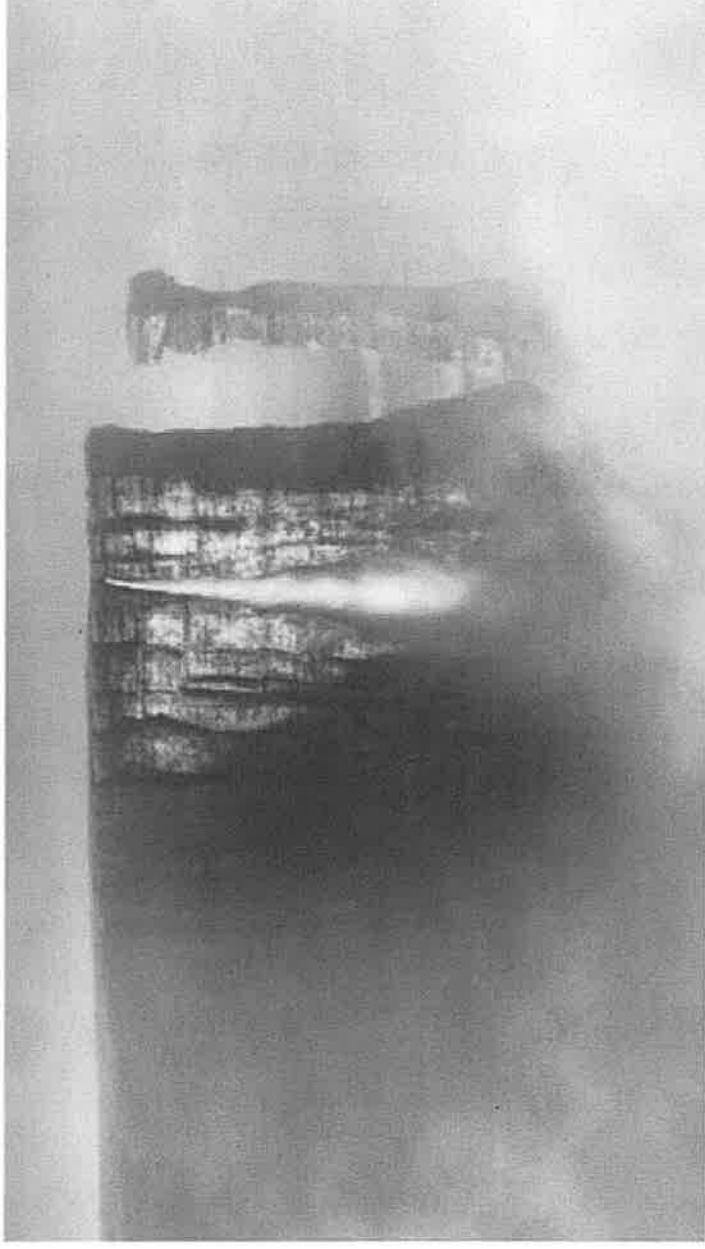
WATER





## Exercise 2: Your three favorite films

Part A: Identify the three films that you would take to a deserted island....



Part B: Why do you think you connected with these stories? Come up with at least one reason for each.

Part C: What, if anything, do these three films have in common? How are they different?



## Exercise 3: What if...



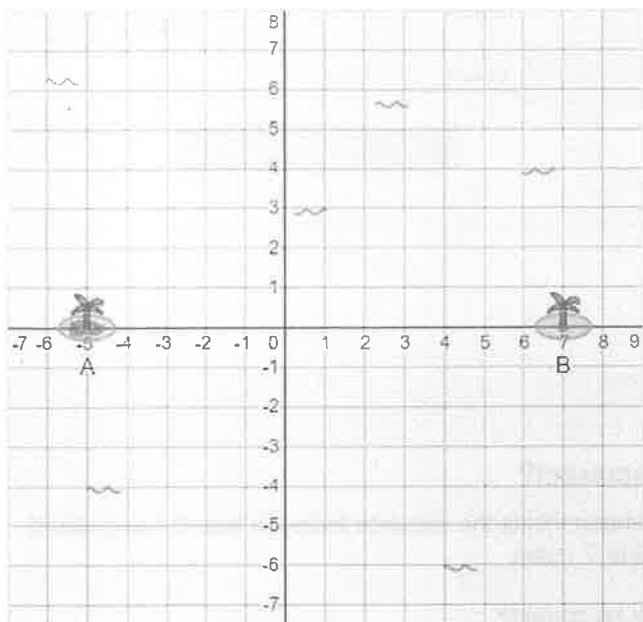
**Part A:** Return to your 3 favorite films and try reframing each of them in terms of a "what if" statement. Share these with someone (written or verbally) and see if they can guess what movie it is from!

**Part B:** Now it's your turn. Come up with 3-5 of your own "what if" ideas.



# Desmos - Collect the Coconuts - Distance on the Coordinate Plane Activity

## Challenge #1



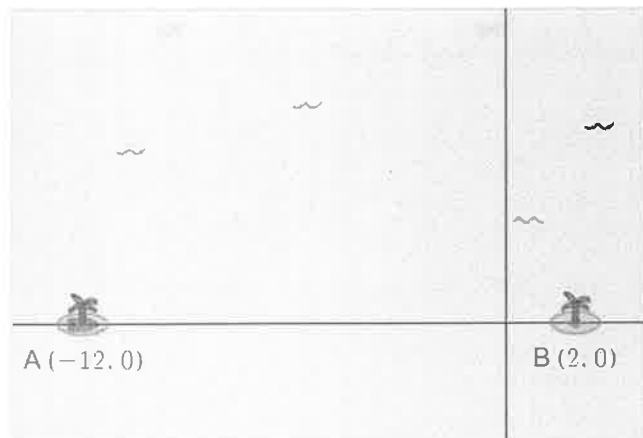
Visit Island B to collect the coconuts. Enter the distance between the islands in the table.

Press "Collect the Coconuts" to check your work.

Islands	Distance Between Islands (miles)
A and B	

Collect the Coconuts

## Challenge #2



Visit Island B to collect the coconuts. Enter the distance between the islands in the table.

Press "Collect the Coconuts" to check your work.

Islands	Distance Between Islands (miles)
A and B	

Collect the Coconuts

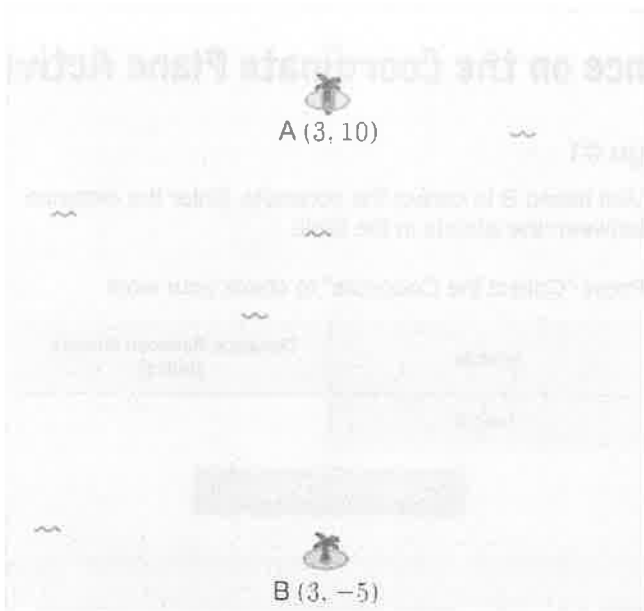
## Coordinates



How can you use the coordinates of Island A and Island B to find the distance between the islands?

Use the sketch tool if it helps you to show your thinking.

### Challenge #4



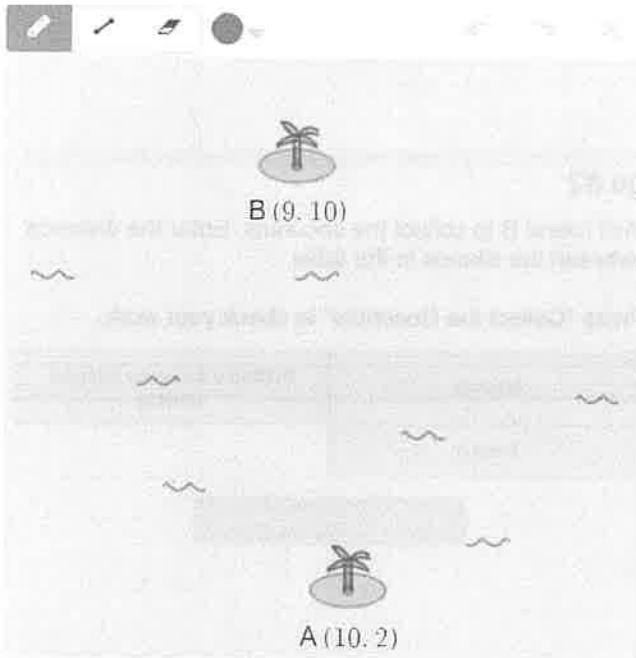
Visit Island B to collect the coconuts. Enter the distance between the islands in the table.

Press "Collect the Coconuts" to check your work.

Islands	Distance Between Islands (miles)
A and B	

Collect the Coconuts

### Correct or Incorrect?



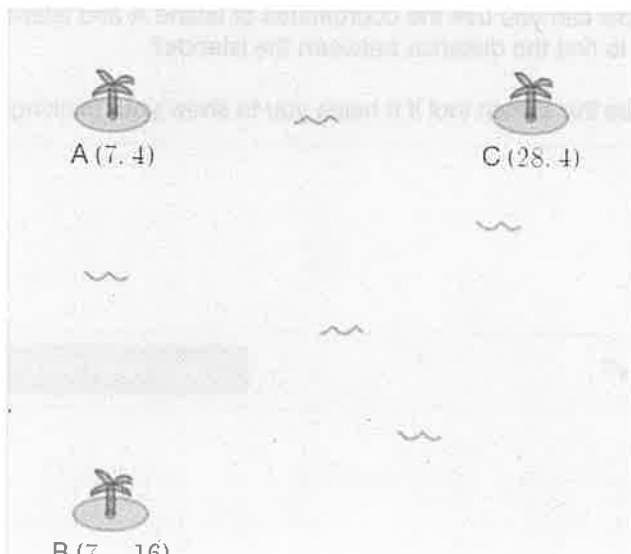
Ishaan thinks the distance between Island A and Island B is 7 miles.

Is he correct?

Use the sketch tool if it helps you to show your thinking.

Yes	No
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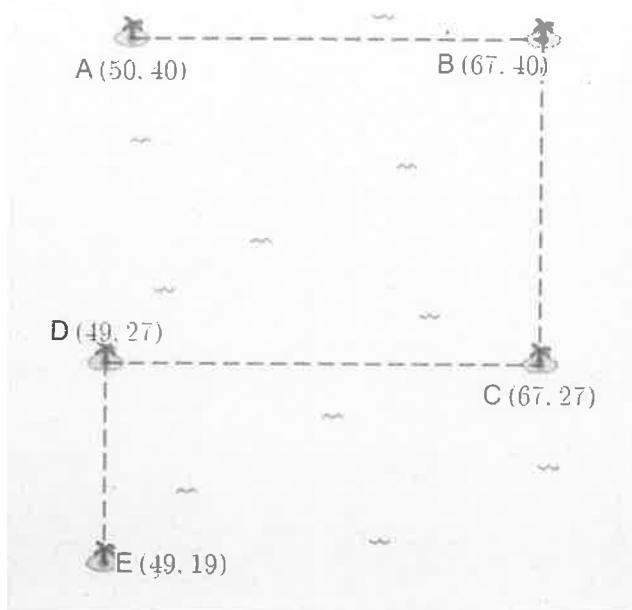
### Closest



Which island is closest to Island A?

Island B	Island C
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### Challenge #5



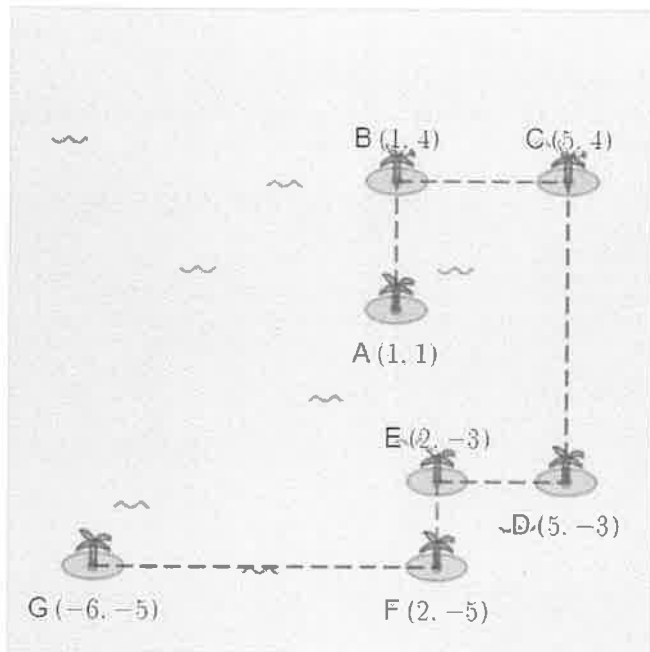
Enter the distance between each pair of islands.

Press "Collect the Coconuts" to check your work.

Islands	Distance Between Islands (miles)
A and B	
B and C	
C and D	
D and E	

Collect the Coconuts

### Challenge #6



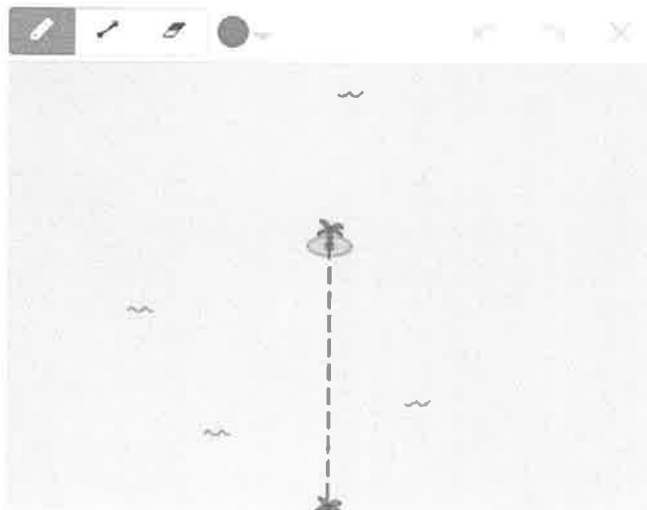
Enter the distance between each pair of islands.

Press "Collect the Coconuts" to check your work.

Island	Distance Between Islands (miles)
A and B	
B and C	
C and D	
D and E	
E and F	
F and G	

Collect the Coconuts

### Vertical Coordinates



Which of these sets of points could represent the coordinates of the islands in this diagram?

Use the sketch tool if it helps you to show your thinking.

{Select all that apply.}

- (5, 0) and (10, 5)
- (8, 0) and (8, 100)
- (0, 5) and (10, 5)
- (-3, -8) and (-3, 2)

