



Gravity Lesson 1: The Solve

Student Handout

I. Watch the Mosa Mack Mystery

Either on your own, in a small group, or as a class (your teacher will let you know), watch Mosa Mack's episode on Gravity. Then, fill out the questions below. Include a time code in your answer as evidence of where you found your answer.

Name: _____

Date: _____

Episode Questions

1. What does Billy think is the reason he heads toward the ground when skydiving?
2. Mosa gives an alternate explanation: gravity. How is gravity defined?
3. Why wasn't Billy hurt when he hit the ground while skydiving?
4. Gravity is acting on Dullis, even when he is holding onto the tree. What do you think would happen if there was no gravity?
5. Gravity is acting on everything! Describe the three examples that are shown in the video.
6. Why is Mosa's vacation video shocking?
7. What measurements does Mosa take to prove that the bowling ball does not defy gravity?
8. What did Mosa figure out? How did Mosa's measurements prove that the ball was moving due to gravity?



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II. Vocabulary Activity

Note: Your teacher will tell you whether you will complete this activity [online here](#), or offline by following the instructions below.

1. Using the materials at your table, cut out your vocabulary cards along the **solid lines**.
2. Write the definitions on the back of the cards. Then, match the vocabulary word with the correct picture on the Gravity Mind Map. When you're ready to glue, raise your hand so you can check your Mind Map with your teacher.
3. Fold along the dotted line on each vocabulary card to create a flap. Put glue or tape **ONLY** on the hinge of your vocabulary cards. Write the word in the box below the card. **You should be able to open the flap to see the word underneath.**
4. Discuss with your group:
 - a. How are the terms force and gravity related?
 - b. How can air resistance change the way gravity acts on an object?
 - c. Try to use the following terms together in one sentence: gravity, force, Earth.

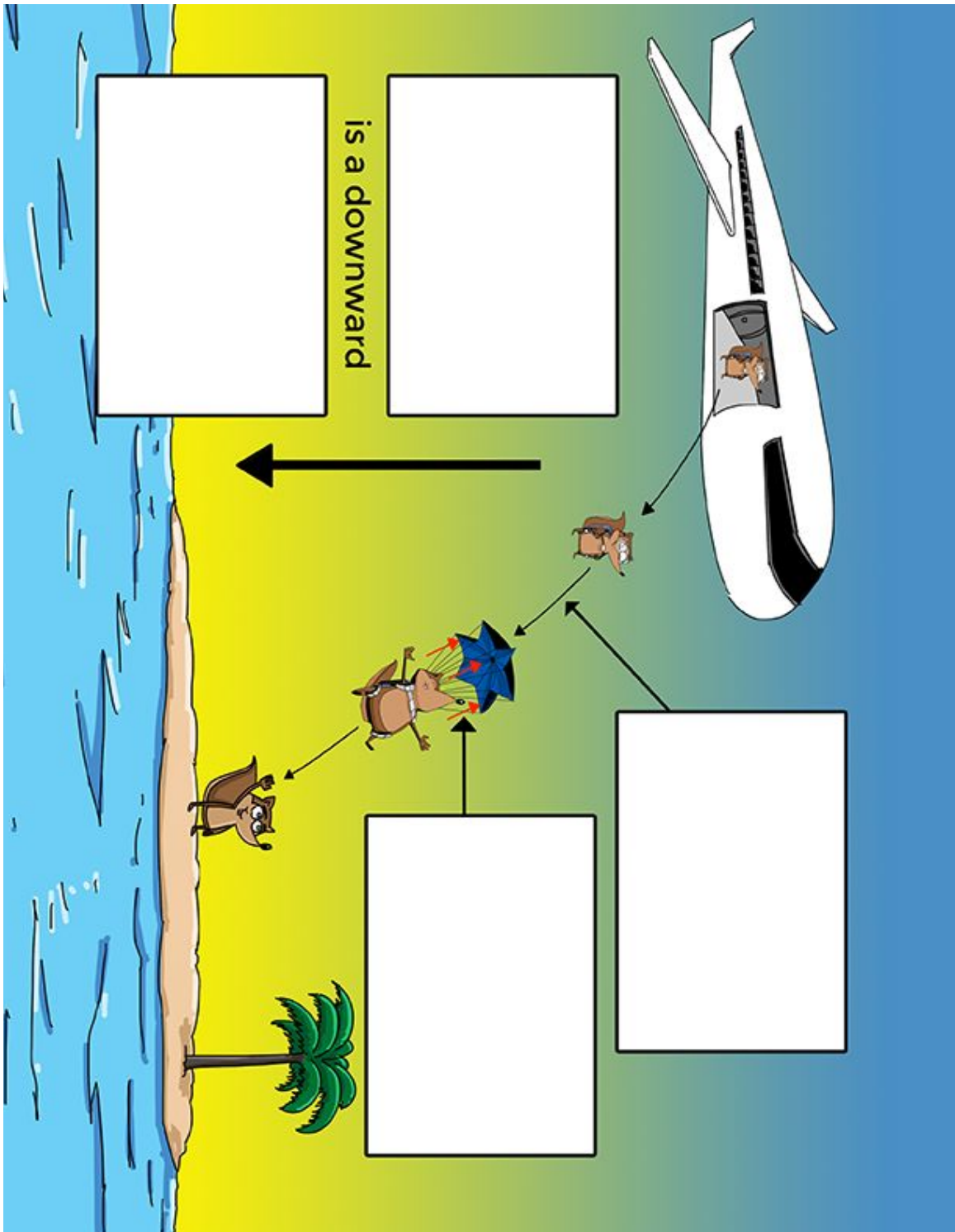




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Mind Map





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Air Resistance

Acceleration

Gravity

Force

Vocabulary

- **Acceleration:** A change in the speed of an object in a given direction over time
- **Air Resistance:** the opposing force air exerts against a moving object
- **Force:** the push or pull upon an object resulting from its interaction with another body
- **Gravity:** A force that attracts objects toward each other based on their mass



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III. Quiz: Check for Understanding

Complete the exit ticket below, or you can take the quiz online!

Name: _____

Date: _____

1. True or false? Billy fell toward the ground when skydiving because someone was pushing him toward the ground.
 - a. True
 - b. False
2. Which of the following is the best definition of gravity?
 - a. A person that pushes objects down toward the earth
 - b. A force that pushes objects down toward the earth
 - c. A force that pulls objects down toward the earth
 - d. A force that pushes objects toward the sky
3. Due to gravity, a ball placed on a sloped surface will always _____.
 - a. Stay in place
 - b. Roll uphill
 - c. Roll downhill
 - d. Float away
4. Which sentence best describes air resistance?
 - a. The frictional force that air exerts against a moving object
 - b. The force that pulls objects toward the earth
5. Which of the following is an example of air resistance?
 - a. Blowing leaves down the sidewalk with a leaf blower pushes them forward
 - b. A falling feather taking longer to reach the ground than a marble
6. Billy learned that when skydiving, gravity pulls him to the ground. If Billy were to skydive again, what body position should he use while falling to help him **slow** his fall? Hint: What body position would increase air resistance?
 - a. Feet first (pencil position)
 - b. Tucked position into a ball
 - c. Head first (upside down pencil)
 - d. Spread arms and legs
7. **Bonus:** Two identical objects of the same size and shape are dropped. One is dropped from a table, while the other is dropped from the top of a tall building. Which will hit the ground with more impact?
 - a. The one dropped from a table
 - b. The one dropped from the top of a tall building