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# Weekly Test Lesson 27

Read the passage. Then answer the questions.

## Straw Rockets

Believe it or not, a lot of information about engineering and rockets can be learned from a simple straw. The simple straw can be transformed into a model of a rocket. A straw rocket is created by using a template to create a paper rocket. This rocket has a body, a nose cone, and fins. These pieces are all taped together. A straw is put into the body of the rocket. The straw acts as a launcher. Once the straw is transformed into a rocket, it can be used to test how different changes affect a rocket's flight. These changes are called variables and can include the amount of air, size, nose weight, type of fins, and angle.

Air pressure powers a straw rocket's launch. The air blowing into the straw puts pressurized air into the chamber. The chamber is a combination of the rocket body and the straw. The rocket launches when the force of the air becomes greater than the force of gravity. The rocket will fly through the air until gravity and friction cause it to slow down and fall to the ground.

Once a straw rocket is built, experiments can be done. These experiments help uncover what changes will make the rocket fly straighter and farther. The more variables that are tested, the better the rocket can become. Only one variable can be tested at a time.

The first variable of a straw rocket is how much air is blown into a straw. The more air blown into the straw, the farther the rocket flies. It is important that the person launching the rocket takes a deep breath before launching. Then, the person needs to blow as much air as possible into the rocket.

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## Reading

A second variable is the size of the rocket. Making a bigger rocket may seem like a good idea. To a certain point, it is. If the rocket is too big, though, it will not fly as far. The goal is to make the size of rocket that will fly the best. This means it may not be as big as you would want.

A third variable is the nose weight. Adding weight to a rocket seems silly. The nose weight does slow a rocket down. But, it also helps the rocket fly straighter. The goal is to have enough nose weight to help the rocket fly straight, but not enough weight to slow the rocket down too much. A good rocket flies straight. Flying straighter means flying farther. It also means the rocket gets to the right place.

A fourth variable is the fins. No rocket is complete without the fins at the bottom. The fins of a rocket add weight and slow the rocket down also. But, they help the rocket fly straighter, too. Fins can be all different shapes and sizes. It is best to try several different types and sizes of fins. Then the best ones can be used.

Finally, the angle the rocket is launched at can be changed. The rocket can be launched straight down. It can be launched straight up. It can be launched at any angle in between.

To make the best straw rocket possible, each of these variables should be tested one at a time. Then all of the information from the tests can be used to build the straightest and farthest flying rocket. The rocket may just be a straw and paper, but the process to develop the best one is just like what a real engineer would use. And it is a lot of fun!

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## Reading

- 1 Read the sentence from the passage.

The rocket will fly through the air until gravity and friction cause it to slow down and fall to the ground.

What does the word fall mean as it is used in the sentence?

- Ⓐ a season when the weather gets cooler
  - Ⓑ to go from a high place to a low place
  - Ⓒ to happen at a special time
  - Ⓓ a decrease in size
- 2 How can a rocket become better?
- Ⓐ Test more variables.
  - Ⓑ Test only a few variables.
  - Ⓒ Test all the variables at once.
  - Ⓓ Do not test any of the variables.

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- 3 This question has two parts. First, answer part A. Then, answer part B.

**Part A**

What **best** explains why a person should take a deep breath before blowing into the straw rocket?

- (A) to test the air
- (B) to start the rocket engine
- (C) to test one of the variables
- (D) to blow as much air as possible into the rocket

**Part B**

What detail from the passage **best** supports the answer to part A?

- (A) The straw acts as a launcher.
- (B) Variables can include the amount of air.
- (C) The more air blown into the straw, the farther the rocket flies.
- (D) Only one variable can be tested at a time.

- 4 Why is it important to test different size rockets? Include details from the passage to support your answer.

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**Reading**

- 5 Which two rocket parts cause the rocket to fly straighter?
- (A) nose weight and fins
  - (B) air chamber and launcher
  - (C) rocket and angle of launch
  - (D) straw length and rocket body
- 6 Label each event from the passage in the order in which it happened based on the causes and effects described. The first event will be labeled 1, and the last event will be labeled 4.
- \_\_\_ The rocket flies.
  - \_\_\_ A person blows into the straw.
  - \_\_\_ The rocket falls to the ground.
  - \_\_\_ Air pressure builds in the chamber.

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## Writing

- 7 Which sentence has a grammar error?
- Ⓐ Camille hasn't come home yet.
  - Ⓑ Isley isn't going to the party tomorrow.
  - Ⓒ Mandip willn't be at the library this week.
  - Ⓓ Sage wasn't happy with the movie she saw.
- 8 Which sentence has a spelling error?
- Ⓐ The car made a suden stop at the intersection.
  - Ⓑ The boy learned an important lesson.
  - Ⓒ The rabbit was very still on the lawn.
  - Ⓓ The girl told me a funny story.
- 9 Read the paragraph. Underline the **two** words that have grammar errors.

The boys played their final game last Wednesday. Theyre usually really good. Unfortunately, this was'nt their best game. They didn't play well. In fact, they played terrible. This won't be a good way to go into the off season.

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**Writing**

- 10 Alicia’s class was going on a field trip to a local library. She started to write a paper to explain what the class would see.

The library is an amazing place. It is filled with many different kinds of books. Some books are fiction. Some books are nonfiction.

Add more details and information to develop Alicia’s paper on the library.

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