Reading Science

Name: _____ Date: _____

A Rube Goldberg Machine

1. "I liked learning about Rube Goldberg in science today. He really had funny ways to use forces," said Cory.

2. "I think we should build one. Mrs. Richardson said we could get extra credit. It looks like fun. There are lumber, hoses, and tubes in our garage. My dad would let us use it," said Jordan.

3. "Okay. I'm in. I'll meet you at your house in the morning. We might even take it to school on Monday," said Cory.

4. Saturday morning came. Cory and Jordan looked at all the materials. Then they made a plan for their Rube Goldberg machine. They used a large piece of plywood as the base. Then they built a tower about 60 centimeters tall in one corner. They nailed a heavy plastic cup off the end of the opposite corner.

5. "Okay. This is the plan. The marble will start at the top of the tower. It will end up in the cup. Now we need to decide on all the steps in between," said Jordan.

6. "Gravity will help get the marble from here to there. Let's use the clear tube to build a roller coaster. The marble will go through it and speed up. We could put in a zigzag. Then the marble would get to change direction," said Cory.

7. "We could build a zigzag track with these wooden strips. It can be at the end of the roller coaster tube. Glue plastic to the sides of the track so the marble stays on. At the end, the marble will drop into this little wooden box," said Jordan.

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8. "Oh, I know what should happen next. Put the wooden box on a strip of carpet. Then pull that up the ramp. The friction between the box and the piece of carpet will keep it from falling. We can put a door with a magnet on one side of the box. Put another magnet at the top of the ramp. They will attract. Then the door will open, and the marble will roll out," said Cory.

9. "I like that. How do we pull the carpet up the ramp?" asked Jordan.

10. "Tie string to the front of the carpet. Put the string over something like a pulley. Tie the other end to a heavy weight. Make something turn and spin to push the weight off. When it drops, gravity will pull the carpet up the ramp," said Cory.

11. "Our plan is coming together. We have used gravity a lot. The tubing roller coaster, the zigzag track, and the weight all use gravity," said Jordan.

12. "We are using friction to keep the wooden box on the ramp. We are using magnetism to open the door for the marble. We are pulling, pushing, and changing directions. Do we have enough of the tubing to make a spiral track? It could go at the end of the carpet-pull ramp. We can stick a funnel in the top of the tube. It will catch the marble. Then it will change directions when it falls out of the box," said Cory.

13. "That will look cool! We should also get points for having different speeds. The marble will be moving fast in the plastic tubing. It will go slower on the zigzag and when it is pulled up the ramp," said Jordan.

14. "Now we know what it will look like. Let's start building. I have a few more ideas too. I think it would be cool if some part made noise," said Cory.

15. "Yes! Noise would be great! We also need to think of a cool name for our Rube Goldberg machine," said Jordan.

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1 Which force most affects the movement of the marble?

A Friction

B Gravity

C Magnetism

D None of the above

2 Why does Cory suggest a funnel?

A To push the marble

B To stop the marble

C To change the direction of the marble

D To pull the marble

3 Which simple machine will be used?

A Pulley

B Wheel and axle

C Lever

D Wedge

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4 What type of energy does the machine use?

A Heat

B Light

C Electrical

D Mechanical

5 What could be a name for Cory and Jordan's machine?

A Marble Roller Coaster

B Marble Merry-Go-Round

C Magnetic Marbles

D Marble Mover