

# I Am Responsible Summative Assessment #3 For A Television in My Room



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## I Am Responsible Summative Assessment #3

**Type of Assessment:**

Performance Assessment

**Duration:**

Assignment completed at home. About five days (or over a weekend) should be allowed from the time the assignment is given until the due date.

**Standard (s) Assessed:**

SC.C.1.2.1.4.1, SC.C.2.2.1.4.1, SC.C.2.2.2.4.1, MA.B.4.2.1.4.1, MA.B.4.2.2.4.1, MA.D.2.2.1.4.1, MA.D.2.2.1.4.3

**Description of Assessment Activity:**

Students create an invention to automatically turn off the television when they fall asleep or leave the room. The assessment evidence includes the invention and a report. Criteria to include in the report: 1) A description of the invention in terms of simple machines and velocity needed (SC.C.1.2.1.4.1, SC.C.2.2.1.4.1) 2) A narrative of the experiments testing the invention including a description of the measurement tool used (SC.C.2.2.2.4.1) and measurements taken using the correct labeling (MA.B.4.2.1.4.1, MA.B.4.2.2.4.1) 3) Calculations of velocity (MA.D.2.2.1.4.1, MA.D.2.2.1.4.3)

**Teacher Directions:**

Gain students' attention by reminding them of the unit scenario. Remind students of all the experiments that they have been doing with velocity. Tell them that the objective of this assessment is for them to have a chance to show what they know about velocity and simple machines. Tell students that they will be using the science information they have learned to create an invention. Discuss the connection between the science content and the need for the invention to show responsibility. Duplicate the instructions, planning slip, and rubric for each student. Discuss the instructions, planning slip and rubric with the students. Answer any questions concerning the assignment. While discussing the rubric, remind students that they will be evaluated only on the standards listed, not on the invention itself. Encourage students to use items from their homes, not spend their parent's money on items for the invention.

\* Suggestions may include: roll a marble to push a button or flip a switch, swing an object and make it push a button or flip a switch, drop an object on a button or switch.

**NOTE:** Students will be getting more practice on these skills before they are assessed. Giving the information to the students at this time allows for them to begin transferring the activities in science to their plans for the project and gives the science lessons a real-world purpose as well as allowing for enough time to complete the assessment.

**Student Directions:**

Listen as I present the assignment, planning slip, and rubric. Ask any questions concerning the assignment, planning slip, or rubric. Begin the assignment today. Self-assess your project using the rubric as you are building the machine and writing the report. Bring the planning slip to school on or before the due date. Bring both the machine and report to school on or before the due date.

**Scoring Method and Criteria:** A rubric of criteria is used to assess students' understanding of velocity, measurement tools and labels, and math calculations using an unknown. A scoring guide accompanies the rubric.

# I Am Responsible

Project Due \_\_\_\_\_

## Directions:

1. Your job is to invent a way to turn off a television when you fall asleep or leave a room. This invention is made by you but may use other inventions as a part. For example, you may invent a new way to use a remote control. Suggestions may include: roll a marble to push a button or flip a switch, swing an object and make it push a button or flip a switch, drop an object on a button or switch.
2. Your invention must use at least one simple machine.
3. Your invention must use velocity for some kind of movement.
4. You must have at least three experiments using your invention. Write notes about the changes you made in the invention after each experiment. Tell how the changes make the invention work better.
5. After finishing the invention and at least three experiments, write your report. Your report must:
  - √ Tell which simple machine was used and how it was used. (SC.C.1.2.1.4.1)
  - √ Tell what velocity does to make your invention work. Tell what moves and why it has to move at so fast or so far to make your invention work. (SC.C.2.2.1.4.1)
  - √ Tell about the experiments testing the invention including what measurement tool was used (SC.C.2.2.2.4.1), measurements taken using the correct labeling (MA.B.4.2.1.4.1, MA.B.4.2.2.4.1), and the changes you made to the invention after each experiment that made the invention work better.
  - √ Show your math of how you found the velocity from each experiment. (MA.D.2.2.1.4.1, MA.D.2.2.1.4.3)
6. Complete and turn in the planning slip by the date due.
7. Turn in the completed project and report by the date due.

Name \_\_\_\_\_

## I Am Responsible Planning Slip

Date Due \_\_\_\_\_

The purpose of this planning is to be sure you have begun the assignment. You may need to change some of these details after you do some experimenting.

1. What simple machine is part of your project?
2. What task does the simple machine make possible?
3. You must measure velocity. What part of your machine will be moving? Why does it need to move?
4. How will your machine turn off the television?
5. When do you think your project and report will be finished?

## I Am Responsible Rubric

Standard	Satisfactory (2 points)	Needs Improvement (1 point)	Unsatisfactory (0 points)
<b>SC.C.1.2.1.4.1</b> Knows that velocity describes a change in distance over time	<input type="checkbox"/> <b>Correctly</b> measures both the distance and time to figure velocity.	<input type="checkbox"/> Correctly measures the distance <b>or</b> time to figure velocity.	<input type="checkbox"/> <b>Does not</b> correctly measure the distance <b>or</b> time to figure velocity.
<b>SC.C.2.2.1.4.1</b> Understands how simple machines are used to make tasks possible	<input type="checkbox"/> <b>Correctly</b> tells about the simple machine used in the invention, <b>and</b> why the simple machine is needed to do the task.	<input type="checkbox"/> Tells about the simple machine used in the invention, <b>and</b> why the simple machine is needed to do the task, <b>but</b> the information is not finished <b>or</b> not correct.	<input type="checkbox"/> <b>Does not</b> tell about the simple machine used and the need for the machine to do a task.
<b>SC.C.2.2.2.4.1</b> Uses tools to measure changes in positions, direction and speed (velocity)	<input type="checkbox"/> <b>Correctly</b> tells tools used to measure changes in direction and time.	<input type="checkbox"/> <b>Attempts</b> to tell tools used to measure changes in direction and time, but information is not correct.	<input type="checkbox"/> <b>Does not</b> tell tools used to measure changes in direction and time.
<b>MA.B.4.2.1.4.1</b> Selects appropriate measurement units for labeling the solution to real-world problems	<input type="checkbox"/> <b>Correctly</b> uses unit labeling for measurements of direction, time, and velocity.	<input type="checkbox"/> <b>Attempts</b> to use unit labeling for measurements of direction, time, and velocity.	<input type="checkbox"/> <b>Does not</b> use unit labeling for measurements of direction, time, and velocity.
<b>MA.B.4.2.2.4.1</b> Selects and uses the appropriate tool for situational measures	<input type="checkbox"/> <b>Correctly</b> selects and uses tools to measure direction and time.	<input type="checkbox"/> <b>Attempts</b> to select and uses tools to measure direction and time.	<input type="checkbox"/> <b>Does not</b> use tools to measure direction and time.
<b>MA.D.2.2.1.4.3</b> Solves problems involving equations using symbolic expressions	<input type="checkbox"/> <b>Correctly</b> uses the symbolic expression $v = d/t$ to find the velocity.	<input type="checkbox"/> <b>Attempts</b> to use the symbolic expression $v = d/t$ to find the velocity.	<input type="checkbox"/> <b>Does not</b> use $v = d/t$ to find the velocity.
<b>MA.D.2.2.1.4.3</b> Translates problem-solving situations into expressions and equations using a variable for the unknown	<input type="checkbox"/> <b>Correctly</b> uses the measurements for distance and speed to find the velocity using $v = d/t$ .	<input type="checkbox"/> <b>Attempts</b> to use the measurements for distance and speed to find the velocity using $v = d/t$ .	<input type="checkbox"/> <b>Does not</b> use the measurements for distance and speed to find the velocity using $v = d/t$ .

Suggested grading scale:

Science: A = 6, B = 5-4, C = 3-2, D = 1, F = 0

Math: A = 8-7, B = 6-5, C = 4-3, D = 2-1, F = 0

## I Am Responsible Rubric Explanation for Teachers

Standard	Satisfactory (2 points)	Needs Improvement (1 point)	Unsatisfactory (0 points)
<p style="text-align: center;"><b>SC.C.1.2.1.4.1</b></p> <p>Knows that velocity describes a change in distance over time</p>	Although you are not viewing students as they measure, you will be looking at the reports to determine whether the students measured both the distance and time for each of the three experiments and whether their results are reasonable.		
<p style="text-align: center;"><b>SC.C.2.2.1.4.1</b></p> <p>Understands how simple machines are used to make tasks possible</p>	The simple machine should be <b>correctly named</b> and the <b>reason</b> for the use of this machine must be explained. (Example: I used an inclined plane so the marble will speed up as it goes down the ramp and will hit the button hard.)		
<p style="text-align: center;"><b>SC.C.2.2.2.4.1</b></p> <p>Uses tools to measure changes in positions, direction and speed</p>	The tools should be named specifically. (Example: I used a centimeter measuring tape and a stopwatch.)		
<p style="text-align: center;"><b>MA.B.4.2.1.4.1</b></p> <p>Selects appropriate measurement units for labeling the solution to real-world problems</p>	Measurement labels must accompany all measurements. (Example: distance = 12 cm, time = 3 seconds, velocity = 12cm/3sec or 4 cm per second)		
<p style="text-align: center;"><b>MA.B.4.2.2.4.1</b></p> <p>Selects and uses the appropriate tool for situational measures</p>	The tools and situation should be named specifically. (Example: I used a centimeter measuring tape to measure the distance and a stopwatch to measure the time.)		
<p style="text-align: center;"><b>MA.D.2.2.1.4.3</b></p> <p>Solves problems involving equations using symbolic expressions</p>	Uses the symbolic equation $v = d/t$ to figure the velocity. Figures labeling may be incorrect, but the formula is used.		
<p style="text-align: center;"><b>MA.D.2.2.1.4.3</b></p> <p>Translates problem-solving situations into expressions and equations using a variable for the unknown</p>	Places the distance, time, and labels in the correct places when figuring the velocity using $v=d/t$ .		