



DEPARTMENT OF EDUCATION

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Superintendent of Public Instruction

Working Together for Student Success

ISTEP+ Part 1 Item Sampler for Science

Grades 4 & 6

Updated September 2016

Part 1 ISTEP+

Sample Items:

The following items are samples, designed for use with

- teachers, as part of professional development, and
- students, to familiarize them with items aligned to the 2010 Indiana Academic Standards for Science

There are two types of Science items found in Part 1 of the ISTEP+ assessment:

- Constructed-response items, which are worth 2 points
- Extended-response items, which are worth 4 points

Grade 6 Constructed-Response Item

Ben was playing with a remote-controlled toy truck on a sidewalk. The toy truck travelled 300 centimeters at a speed of 54 centimeters per second. Ben then put 50 grams of soil into the bed of the truck and let the truck again travel for 300 centimeters.

Describe how the speed of the truck will be affected after adding the soil to the truck. Explain your answer.

Constructed-Response Item: Example Answer

The speed of the truck would decrease after the soil is added because the additional mass of the soil would cause the truck to slow down.

Grade 4 Extended-Response Item

Eric predicted that warm water would boil faster than water at room temperature. He performed an experiment to determine whether water at 40°C boiled faster than water at 20°C. The table shows his data.

Trial	Starting Temperature (°C)	Amount of Water (L)	Time Needed to Boil (minutes)
A	20	2	9
B	20	2	10
C	20	2	9
D	20	2	9.5
E	40	2	6
F	40	2	5
G	40	2	15
H	40	2	5.5

Grade 4 Extended-Response Item

- Name TWO tools Eric used to complete his experiment.
- Explain whether or not the data supports Eric's prediction.
- Eric's teacher suggests that Eric communicate his results to other scientists. Explain why it is important to communicate their results with other scientists.
- Look at the data for Trial G. Describe ONE possible explanation for why this trial has a different outcome from the other trials.

Extended Response Item: Example Answer

- Thermometer, stove/burner/hot plate, graduated cylinder/beaker, or other valid tool.
- Trials E, F, and H support Eric's prediction because the water with the higher starting temperatures took less time to boil than Trials A-D. Trial G took longer to boil and does not support Eric's prediction.
- Communicating results allows other scientists to repeat the experiment for reliability or as a basis for future/similar experiments.
- Trial G may be different because:
 - The heat source used for Trial G might have been different than what was used for the other trials-
 - The water sample used in Trial G might have contained something/another chemical in the water that caused the boiling point to be higher than the other water samples.

Resources

- Item Sampler
- Released Items and Scoring Notes
- Instructional and Assessment Guidance

Questions

- Please contact Tim Martin for science assessment questions at tmartin1@doe.in.gov.
- For other questions, please contact the Office of Student Assessment by calling (317) 232-9050 or via email at INassessments@doe.in.gov.



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