

# INTERMEDIATE PERFORMANCE EVENT TEMPLATE for 2007-2010 MAP

## TYPICAL SEQUENCE OF COMPONENTS

Minimum Total Points = 16 (10 prompts)    Maximum Total Points = 20 (14 prompts)

N = necessary components    \*See standardized scoring guide

### SCENARIO

Ideally the template starts with the scenario of a new experimental situation. The procedure is given as well as a picture visualizing the set up.

|   | Performance Event COMPONENT                         | GLEs that may be addressed  | NOTES  | NO of ITEM PROMPTS | TOTAL POINT RANGE       |
|---|---|---|--|--------------------|-------------------------|
|   | Questions about measurements, tools, units          | <b>IN.1.B8b:</b> Determine the appropriate tools and techniques to gather data<br><b>IN.1.B8c:</b> Use a variety of tools and equipment to gather data....<br><b>IN.1.B8d:</b> Measure length to the nearest millimeter, mass to the nearest gram, volume to the nearest milliliter, force (weight) to the nearest Newton, temperature to the nearest degree Celsius, time to the nearest second)   | <i>This may be assessed as it relates to a new scenario found later in the Performance Event</i> | 1-2                | 2<br>(1/item)           |
| N | Questions about experimental design                 | <b>IN.1.A8b:</b> Recognize the importance of the independent variable, dependent variables, control, constants, and multiple trials to the design of a valid experiment<br><b>IN.1.A8c:</b> Design and conduct a valid experiment<br><b>IN.1.A8d:</b> Evaluate the design of an experiment and make suggestions for reasonable improvements or extensions of an experiment<br><b>IN.1.D8a:</b> Evaluate the reasonableness of an explanation (conclusion) | <i>Ask questions regarding those ideas not assessed in other items in Performance Event</i>      | 1-2                | 1-4<br>(1-2/item)       |
| N | Identify Independent <u>and</u> Dependent Variables | <b>IN.1.A8b:</b> Recognize the importance of the independent variable, dependent variables, control, constants, and multiple trials to the design of a valid experiment   | <i>This may be assessed as it relates to a new scenario found later in the Performance Event</i> | 1<br>(2 prompts)   | 2<br>(1/prompt in item) |

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### DATA PROVIDED

|        | Performance Event COMPONENT  | GLEs that may be addressed  | NOTES  | NO of ITEM PROMPTS | TOTAL POINT RANGE |
|--------|--|---|--|--------------------|-------------------|
| N      | <b>Manipulate Data</b><br>(e.g., calculate averages, change in data over time, difference between or sum of data values) | <b>IN.1.B8e:</b> Compare amounts/measurements<br><b>IN.1.B8f:</b> Judge whether measurements and computation of quantities are reasonable<br><b>IN.1.B8g:</b> Calculate the range and average/mean of a set of data   | <i>A data table is presented with the results of multiple trials. An additional column for the average of those trials is given and partially filled in</i>            | 1                  | 1                 |
| N<br>* | <b>Create a graph</b> requiring title, axes labeled, intervals numbered, data plotted accurately                         | <b>IN.1.E8a:</b> Communicate the procedures, results of investigations, and explanations through ...graphs (bar, single line, pictographs)....  | <i>Every performance event should require the student to create a <b>data table and/or a graph</b></i><br><br><i>A 10x10 grid with spaces for labeling is provided</i> | 1                  | 4                 |
| N      | <b>Interpret data/graph <u>or</u> Make a conclusion</b>  | <b>IN.1.A8b:</b> Recognize the importance of the independent variable, dependent variables, control, constants, and multiple trials to the design of a valid experiment<br><b>IN.1.C8a:</b> Use quantitative and qualitative data to construct reasonable explanations (conclusions)<br><b>IN.1.C8b:</b> Use data as support for observed patterns and relationships, and to make predictions to be tested<br><b>IN.1.C8c:</b> Recognize the possible effects of errors in observations, measurements, and calculations on the formulation of explanations (conclusions)<br><b>IN.1.D8b:</b> Analyze whether evidence (data) and scientific principles support proposed explanations (hypotheses, laws, theories) | <i>Ask questions regarding those ideas not assessed in other items in Performance Event</i>  | 1-2                | 1-2<br>(1/item)   |

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### NEW SCENARIO (same theme)

|                 |  |   |   |     |                           |
|-----------------|--|---|---|-----|---------------------------|
| N<br>(see note) | Write a testable question to investigate (related to new scenario)                   | IN.1A8a: Formulate testable questions...  | At least one of items regarding writing a testable question or hypothesis are to be included on each test<br><br>This may be asked as a new experiment proposed by the student later in the Performance Event | 1   | 1                         |
| N<br>(see note) | Write a testable hypothesis  | IN.1A8a: Formulate testable ...hypotheses   | At least one of items regarding writing a testable question or hypothesis are to be included on each test   | 1   | 1                         |
| N               | Identify Independent <u>and</u> Dependent Variables or Variables to be held constant | IN.1.A8b: Recognize the importance of the <u>independent variable, dependent variables, control, constants</u> , and multiple trials to the design of a valid experiment  | Do not ask for understanding of independent and dependent variables if assessed earlier   | 1-2 | 2-3<br>(1/prompt in item) |
|                 | Questions about experimental design  | IN.1.A8b: Recognize the importance of the independent variable, dependent variables, control, constants, and multiple trials to the design of a valid experiment<br>IN.1.A8c: Design and conduct a valid experiment<br>IN.1.A8d: Evaluate the design of an experiment and make suggestions for reasonable improvements or extensions of an experiment<br>IN.1.D8a: Evaluate the reasonableness of an explanation (conclusion) | Ask questions regarding those ideas not assessed in other items in Performance Event  | 1-2 | 1-2<br>(1/item)           |

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### POSSIBLE NEW SCENARIO PROPOSED BY STUDENT (same theme)

|   |  |   |   |            |                                       |
|---|--|---|---|------------|---------------------------------------|
|   | <b>Identify measurements to be taken and equipment used to make measurements</b> | <p><b>IN.1.B8b:</b> Determine the appropriate tools and techniques to gather data</p> <p><b>IN.1.B8c:</b> Use a variety of tools and equipment to gather data....</p> <p><b>IN.1.B8d:</b> Measure length to the nearest millimeter, mass to the nearest gram, volume to the nearest milliliter, force (weight) to the nearest Newton, temperature to the nearest degree Celsius, time to the nearest second</p> | <i>Ask questions regarding those ideas not assessed in other items in Performance Event</i>                   | <b>1-2</b> | <b>2</b><br><b>(1/prompt in item)</b> |
| * | <b>Create a data table for measurements</b>                                      | <p><b>IN.1.A8b:</b> Recognize the importance of the independent variable, dependent variables, control, constants, and multiple trials to the design of a valid experiment</p> <p><b>IN.1.E8a:</b> Communicate the procedures and results of investigations through ...data tables....</p>  | <i>Every performance event should require the student to create a <b>data table</b> and/or a <b>graph</b></i> | <b>1</b>   | <b>2</b>                              |

## INTERMEDIATE PERFORMANCE EVENT TEMPLATE for 2007-2010 MAP

### Generic Scoring Guide for BAR or Single Line GRAPH, Grade 8

(10x10 grid provided with horizontal lines/spaces for labeling of axes and title, prompt designates bar or line graph to be constructed)

#### Four Total Points

One point for each of the following:

- **Appropriate title:** a statement of the relationship between the independent and dependent variables or a statement of what is being tested
- **Both axes correctly labeled, with units** if appropriate
- **Appropriate number scale(s) written along axis/axes:** numbers on the gridlines, numbers that allow all data to be plotted, consistently scaled **AND**, for bar graphs, **appropriate category labels written along axis below bars**
- **All data points correctly plotted AND**, for line graphs, **correctly connected by a line**

#### Prompt for line graph reads:

Use the data from Table \_\_\_ to construct a line graph on the grid below. (Customized information related to data to be plotted may be provided.)

Be sure to provide:

- an appropriate title
- a label for each axis with appropriate units
- appropriate number scales
- correctly plotted data

#### Prompt for bar graph reads:

Use the data from Table \_\_\_ to construct a bar graph on the grid below. (Customized information related to data to be plotted may be provided.)

Be sure to provide:

- an appropriate title
- a label for each axis with appropriate units
- an appropriate number scale and category labels
- correctly plotted data

## INTERMEDIATE PERFORMANCE EVENT TEMPLATE for 2007-2010 MAP

### Generic Scoring Guide for DATA TABLES, Grade 8

#### Two Total Points

#### One point for each of the following:

**Point 1:** The **row or column headings indicate what information is to be manipulated and recorded relative to the independent variable** (can be a descriptive heading with units, if appropriate, or the conditions to be varied may be written in).

**AND**

The **row or column headings indicate what information is to be observed and recorded relative to the dependent variable** (can be a descriptive heading with units, if appropriate, or the conditions to be varied may be written in).

**Point 2:** Data table is **organized to allow for collection and analysis of data relevant to the experiment**

#### Prompt reads:

Construct a data table in the space below that would compare the IV and DV. The data table should be designed so that other students could use it to record and analyze the data collected during the (new) experiment. Be sure to label rows and columns appropriately.

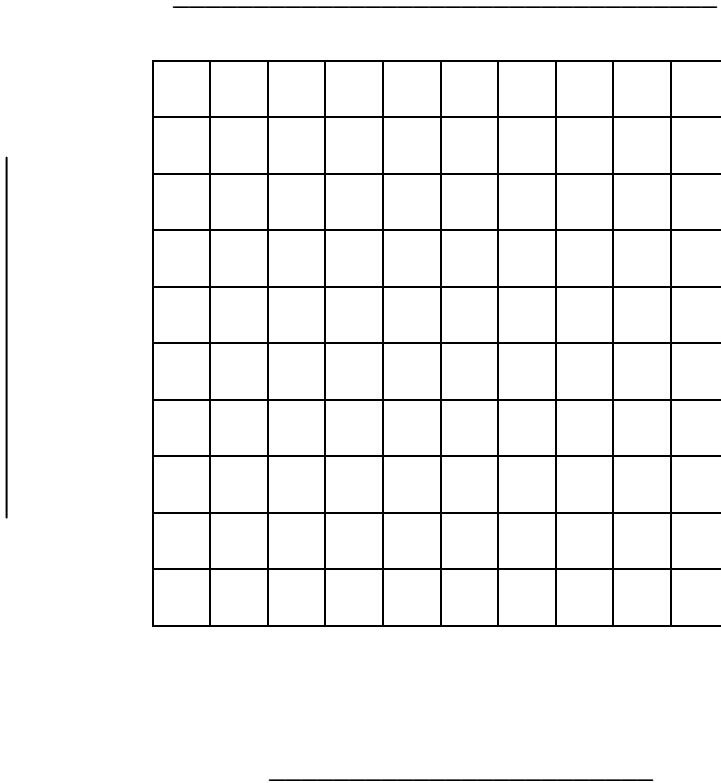
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## BLANK TEMPLATE FOR BAR GRAPH PROMPT:

Use the data from Table \_\_\_\_ to construct a bar graph on the grid below.

Be sure to provide:

- an appropriate title
- a label for each axis with appropriate units
- an appropriate number scale and category labels
- correctly plotted data



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## BLANK TEMPLATE FOR LINE GRAPH PROMPT:

Use the data from Table \_\_\_\_ to construct a line graph on the grid below.

Be sure to provide:

- an appropriate title
- a label for each axis with appropriate units
- an appropriate number scales
- correctly plotted data

