Formative Assessment Worksheet  
Specification #2

Teacher ID:   
School ID:

|  |  |  |
| --- | --- | --- |
| **Target competency:**  special arrow.wmf Student can create a plan for carrying out a scientific investigation, including what, when, and how to measure variables. | | |
| Anticipated student misconceptions relevant to this target competency: | | |
|  | **Learning Progression Leading to the Target Competency** (List Building Blocks in Reverse Chronological Order) | **Type of Knowledge** |
| 5. |  |  |
| 4. |  |  |
| 3. |  |  |
| 2. |  |  |
| 1. |  |  |

Copy/paste **Building Block 1** into this box:

In two to four sentences, describe what you will do with your students to help them achieve this building block.

→

State how you will assess this building block. In other words, what will you ask your students to do to establish whether they have achieved this building block? Identify the assessment format you will use.

→

Copy/paste **Building Block 2** into this box:

In two to four sentences, describe what you will do with your students to help them achieve this building block.

→

State how you will assess this building block. In other words, what will you ask your students to do to establish whether they have achieved this building block? Identify the assessment format you will use.

→

Copy/paste **Building Block 3** into this box:

In two to four sentences, describe what you will do with your students to help them achieve this building block.

→

State how you will assess this building block. In other words, what will you ask your students to do to establish whether they have achieved this building block? Identify the assessment format you will use.

→

Copy/paste **Building Block 4** into this box:

In two to four sentences, describe what you will do with your students to help them achieve this building block.

→

State how you will assess this building block. In other words, what will you ask your students to do to establish whether they have achieved this building block? Identify the assessment format you will use.

→

Copy/paste **Building Block 5** into this box:

In two to four sentences, describe what you will do with your students to help them achieve this building block.

→

State how you will assess this building block. In other words, what will you ask your students to do to establish whether they have achieved this building block? Identify the assessment format you will use.

→

**Target Competency:**

Student can create a plan for carrying out a scientific investigation, including what, when, and how to measure variables.

In two to four sentences, describe what you will do with your students to help them achieve this target competency, assuming they have achieved the above building blocks.

→

NOTE: **Do not state how you will assess this target competency in this box.** The design of the assessment is established by the specification. Use the following pages of the worksheet to describe what you will do to assess this target competency. Refer to the guidelines in the “**Procedure for Creating Parallel Tasks**” section in Specification #2 when developing this formative assessment.

**Student Instructions**

*[Type introductory paragraph to describe the context of the research question to be investigated.]*

*[Insert photograph (if necessary) to provide additional context.]*

|  |  |
| --- | --- |
| **Research Question:** | *[Type the research question to be investigated here.]* |
| **Develop Your Plan:** | Develop your plan for investigating this research question. Your plan must be very specific. Be sure to address each of these four points in your plan:   * **Describe** what you would do (and when you would do it) to investigate the research question. * **Describe** how you would obtain your observations or measurements and what instruments or equipment you would use. * **Provide enough detail** so that another person could carry out the investigation according to your plan. * **Describe** at least **one external factor** that could affect the results of your investigation. |

In your research plan, an **external factor** is anything other than *[type the independent variable here]* that affects *[type the dependent variable here]*. It is important to be aware of possible external factors because they could affect the research. The external factors rather than *[type the independent variable here]* might affect *[type the dependent variable here]*.

You must prepare this research plan by yourself. However, it is okay if carrying out the plan you create requires others to help you. It also is okay if your plan would require going to places away from your school or using materials not available at your school.

On the paper provided, describe the plan you create. Again, be very specific and careful to address each of the four points listed above.

**Student Answer Sheet Name:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

Student Formative Assessment Checklist

This checklist can be used by students for self-assessment or by you to provide feedback. The checklist is based on the specification and reworded to suit seventh-grade reading level. Please feel free to reword for your students.

**Directions:** Use this checklist to evaluate your work. Read each section below and put a check in the box (🗹) next to each statement that accurately describes your work.

**Plan Characteristics**

|  |  |
| --- | --- |
| According to my research plan, it is clear that *[type the independent variable here]* is what might affect *[type the dependent variable here]*. | 🞎 |
| My plan describes a way to measure *[type the independent variable here].* | 🞎 |
| According to my research plan, it is clear that *[type the dependent variable here]* might be affected by *[type the independent variable here]*. | 🞎 |
| My plan describes a way to measure *[type the dependent variable here].* | 🞎 |
| The steps of my plan make sense. | 🞎 |
| I have included enough detail in my plan that another person could carry out the same plan simply by doing what I have written. | 🞎 |

**Data Quality**

|  |  |
| --- | --- |
| I measured *[type the independent variable here]* using *[type acceptable methods of measuring the independent variable here]* ***and*** I recorded the measurements in *[type acceptable units of measurement for the independent variable here]*. | 🞎 |
| I measured *[type the dependent variable here]* using *[type acceptable methods of measuring the dependent variable here]* ***and*** I recorded the measurements in *[type acceptable units of measurement for the dependent variable here]*. | 🞎 |
| I described an external factor that could also influence *[type the dependent variable here].* | 🞎 |

**Repetition of Measurements**

|  |  |
| --- | --- |
| My plan includes measurements of the *[type the dependent variable here]* at **different** values of *[type the independent variable here].* | 🞎 |
| My plan includes measurements of the *[type the dependent variable here]* for at least three different values of *[type the independent variable here].* | 🞎 |
| My plan includes multiple measurements of the *[type the dependent variable here]* at **each** value of *[type the independent variable here]* for which I will collect data. | 🞎 |