A purple rectangle with white background

Description automatically generatedA black background with a black square

Description automatically generated with medium confidence**Science Skills Rubric**

**What to do:** Share this rubric with students and review the skills they’ll need to demonstrate at each ability level (novice, apprentice, and expert). You can use the third page as a template to create a rubric for any science-related project.

**Why it matters:** Students have more confidence and buy-in when they know the expectations for high performance. Also, rubrics like this one help activity leaders evaluate student performance consistently and provide specific feedback.

**Assessment**

# Ready-to-Use Science Skills Rubric

| **Skill/Knowledge** |  | **Value** |  | **Points** |
| --- | --- | --- | --- | --- |
| Novice (1 point) | Apprentice (2 points) | Expert (3 points) |
| Making observations and asking questions | * Required consistent prompting to identify observations * Described observations incompletely * Made very basic predictions | * Required some prompting to identify observations * Identified some things of interest and opportunities for investigation * Made some predictions | * Made observations without prompting * Described observations in writing * Identified things of interest or ideas for future investigation * Made predictions based on observational evidence |  |
| Planning and doing investigations | * Required step-by-step assistance and guidance to complete tasks * Project was incomplete or late | * Required some assistance to approach and complete tasks * Completed project with some distraction | * Used a sophisticated strategy to approach and complete the tasks * Completed project on time and with minimal distraction |  |
| Collecting and analyzing data | * Collected some initial data with assistance * Data were incomplete, disorganized, or hadn’t been analyzed | * Imprecise data were collected or some errors were present in collection or calculation | * Data were complete and precise * All relevant details were recorded * Demonstrated understanding of how to use data collection tools * Analysis was performed |  |
| Developing and using scientific models | * No connections were made between investigation and larger scientific ideas | * Identified trends that were not always consistent with observations * Larger connections between ideas were not present or were incomplete | * Demonstrated understanding of key science concepts * Took clear, logical steps * Identified connections between observations and larger phenomena |  |
| Engaging in argument from evidence and constructing explanations | * Required assistance to identify basic trends or larger concepts * Reasoning was incomplete or incorrect | * Exhibited basic reasoning skills and some understanding of larger concepts * Made basic interpretations of data * Required assistance to develop conclusions from observable evidence | * Used complex reasoning and demonstrated understanding of cause and effect * Provided clear explanations * Developed conclusions that were supported by data * Raised new questions based on findings |  |
| Sharing findings | * Required assistance to communicate information or clearly represent findings * Shared incomplete information | * Communicated basic findings using one form of expression * Shared general information with community/audience | * Communicated ideas clearly, using multiple channels or forms of expression (written, spoken, etc.) * Created innovative or interesting ways to represent information (videos, public service announcements, etc.) * Made information accessible and interesting to the intended community/audience |  |

# Template for Customized Science Skills Rubric

**Directions:** Use this template to create a customized rubric based on the science process skills listed in column 1. Fill in the observable actions based on the ability levels of “novice,” “apprentice,” and “expert.”

| **Skill/Knowledge** | **Value** | | | **Points** |
| --- | --- | --- | --- | --- |
| *Novice (1 point)* | *Apprentice (2 points)* | *Expert (3 points)* |
| Making observations and asking questions |  |  |  |  |
| Planning and executing investigations |  |  |  |  |
| Collecting and analyzing data |  |  |  |  |
| Developing and using scientific models |  |  |  |  |
| Engaging in argument from evidence and constructing explanations |  |  |  |  |
| Sharing findings |  |  |  |  |



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