Electricity and Magnetism Unit Project

**PA Common Core Standards:**

**3.2.3.B4.** Identify and classify objects and materials that are conductors or insulators of electricity

**S3.A.2.1.2:** Make predictions based on observations.

**3.2.3.B4:** Identify and classify objects and materials as magnetic or non-magnetic

**S3.A.2.1.1:** Generate questions about objects, organisms, or events that can be answered through scientific investigations.

**Objectives:**

The third grade students will be able to demonstrate understanding of a self-selected topic (electricity and/or magnetism) by completing a trifold poster and a journal entry.

The third grade students will be able to ask questions based on current knowledge by completing a journal entry.

The third grade students will be able to make predictions based on their observations by completing a journal entry.

**Procedure:**

1. We will be having an electricity and magnetism science fair!
2. Students will ask an inquiry based question about one aspect of magnetism and electricity that they would like to explore further. Ex. Why is it more dangerous to be near water during a lightning storm? Can magnetic force travel through materials?
3. Students will ask these questions in their journals at the beginning of the unit and make a prediction.
4. Students will be provided with a variety of materials to explore their topics during the unit (books, magazines, websites, hands-on, etc.)
5. Students will be given time to work on their unit projects throughout the week and computer lab time will be scheduled to access online resources.
6. Students will be given a day in which they can design and conduct their own inquiry based activity. Teacher will conference with students at beginning of unit to allow time to plan and gather materials for their activity.
7. Students will create a trifold poster (like an extended journal entry) that has information about their question/topic.
8. During the classroom science fair, each student will present their discoveries to their classmates by presenting their poster and talking about (possibly showing) their experiments. (This may need to be broken into a few days depending on time)
9. A journal entry will be completed for the experiment.
10. Tri-folds will be evaluated using a rubric.
11. Journal entries will be evaluated using a checklist

**What to include on poster:**

* At least 3 facts about topic/question
* At least 1 on topic future question
* At least 3 new vocabulary words
* At least 3 new discoveries (what they learned)
* Encourage the use of colors, drawings, and photos (students not graded on artistic ability or the appearance of the poster)

Student Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Topic/Inquiry Question: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Experiment: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Electricity and Magnetism Unit Project Rubric

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Category | Above and Beyond! (4) | Good Work (3) | Almost There (2) | Getting Started (1) |
| Facts about topic or question | Student had 4 or more facts on the poster. | Student had 3 facts on the poster. | Student had 2 facts on the poster. | Student had 0-1 fact on the poster. |
| Future question (What else do you want to learn?) | Student included more than 1 on topic future question. | Student included an on topic future question. | Student included a future question, but it was off topic. | Student did not include a future question on the poster. |
| Vocabulary words | Student had 4 or more vocabulary words with definitions (written or pictures) on poster. | Student had 3 vocabulary words with definitions (written or pictures) on the poster. | Student had 2 vocabulary words with definitions (written or pictures) on the poster. | Student had 0-1 vocabulary word with a definition (written or picture) on the poster. |
| New discoveries (What did you learn?) | Student included 4 or more new discoveries on the poster. | Student included 3 new discoveries on the poster. | Student included 2 new discoveries on the poster. | Student included 0-1 new discoveries on the poster. |

Points: \_\_\_/16

Comments/Observations:

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Journal Entry Checklist:

Student Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Experiment: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

|  |  |  |
| --- | --- | --- |
| Category | Student Meets Requirements | Students Does Not Meet Requirements |
| Did the student include a focus question? |  |  |
| Did the student include a prediction? |  |  |
| Did the student include a labeled diagram/picture? |  |  |
| Did the student include a step by step procedure and/or observations? |  |  |
| Did the student include a conclusion? |  |  |
| Did the student include at least 1 future question? |  |  |

Comments/Observations:

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\*NA indicates that that portion of the journal was not completed for the specific activity. Ex. Predictions were not done for the “making a compass” activity.