KUTZTOWN UNIVERSITY

ELEMENTARY EDUCATION DEPARTMENT

PROFESSIONAL SEMESTER PROGRAM

Teacher Candidate: Paige Weaver Date: 4/6/15

Cooperating Teacher: Coop. Initials

Group Size: Small Group Allotted Time 30-40 minutes Grade Level Third

Subject or Topic: Magnetism Section

STANDARD: (PA Common Core):

**S3.C.3.1:** Observe and identify changes in an object’s motion.

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

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

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

I. Performance Objectives (Learning Outcomes)

1. The third grade students will be able to classify materials as magnetic or non-magnetic by completing a journal entry.
2. The third grade students will be able to identify that magnetic forces can pass through specific materials by completing a journal entry and the Can Magnetic Force Pass Through Anything handout.
3. The third grade students will be able to make predictions and generate questions based on observations by completing a journal entry and the Can Magnetic Force Pass Through Anything handout.

II. Instructional Materials

1. Exploration Trays- 1 for each table
2. Various magnets- set for each table
3. Testable materials -set for each table
   1. Paper
   2. Plastic
   3. Styrofoam plates and sheets
   4. Wood
   5. Felt
   6. Thin Book
   7. Thick Book
   8. Metal Bucket
   9. Cup of water
   10. Paperclip
   11. String
   12. Glass
   13. Aluminum foil
4. Laminated Sorting Sheets- 2 per table
5. Laminated Material Sorting Cards-1 for each material
6. Painting with Magnets:
   1. Paper plates- 1 per student
   2. Assorted paints- 1 assortment per table
   3. Paperclips-1 per student
   4. Magnets- 1 per student
7. PowerPoint
8. Magnets, Electricity, and Experiments Oh My! (Weebly)

III. Subject Matter/ Content (prerequisite skills, key vocabulary, big idea, New Content)

1. Prerequisite Skills
2. Magnetic forces can pass through most materials, but not those with iron in them.
3. Numerous factors contribute to whether or not magnetic forces can pass through materials.
4. Magnets are found all around us in our everyday life.
5. Good scientists make predictions and ask questions to solve problems through inquiry.
6. Key Vocabulary
7. Magnetic field- A region of space near a magnet, electric current, or moving charged particle in which a magnetic force acts on any other magnet, electric current, or moving charged particle.
8. Magnetic Force- the mechanical force exerted by a magnetic field upon a magnetic pole placed in it
9. Big Idea- Scientific discovery through magnetism
10. New Content
11. What materials can a magnetic force pass through?
    1. Thickness of material is a factor
    2. Distance between materials is a factor
    3. Magnets can pass through most non-magnetic materials
12. Examples of materials that magnetic forces can pass through
    1. Plastic
    2. Water
    3. Air
    4. Felt
    5. Styrofoam
    6. Glass
    7. Paper
    8. Skin
    9. Wood
    10. Aluminum foil
13. Examples of materials that magnetic forces cannot pass through
    1. Materials that are very thick
    2. Materials that are too far away
14. Examples of where magnets are found in the world around us
    1. Scrap yards
    2. The earth
    3. Electronics
    4. Compasses
    5. Rollercoasters
    6. Surgeries
    7. Opening/closing objects (fridge)
    8. Metal detectors in airports
    9. ATM cards
15. Observation- make predictions and ask questions based on observation for further inquiry

IV. Implementation

1. Introduction –
2. “Did you know that you could be an artist and a scientist at the same time?”
3. Make a prediction: “How many students think that the magnet can make the paperclip move even though the plate is between them?” (
4. Students will complete magnetic painting using a paper plate, paperclip, and a magnet. Each student will be given these materials and each table will be provided with paints to choose from.
5. Give students about 5 minutes to create their painting. Ask students to share what they have observed.
6. Development –
7. Place magnetic paintings on table to dry.
8. Pass out exploration trays and sorting mats.
9. Students will be given about 5 minutes to record their predictions on their journal entries. Talk about why predictions are important and give and example.
10. Now that students know that magnetic force can pass through paper plates, it is up to them as scientists to discover what other materials magnetic forces can pass through by creating their own tests. Include that they should use their hands to test if it can pass through skin. Students should make predictions on handout.
11. Allow students about 10 minutes to explore the materials and carry out their own tests while recording findings on handout.
12. Bring class back together and complete laminated sort of given materials together on the board by asking for student input based on their observations and discoveries.
13. Students will be given about 10 minutes to complete their journal entries including observations, procedure, conclusion, and at least one future question.
14. Closure –
15. Brainstorm ideas of how magnets are found in the world around us. Ask for student input and record answers on board.
16. Go through picture of examples of how magnets are used in everyday life on Weebly.
17. Assignment- Ask students to think about how magnets are used in everyday life. Tell them to become a reporter and interview their friends and family members on how magnets are used and where they appear in the world. They also should include their own thoughts. This can be done in a drawing, written list, or a combination of the two. Students will present their “news report” in groups the next day.
18. Accommodations / Differentiation –
19. Student learning levels will be considered when making groups.
20. Evaluations will be completed orally with the teacher scribing the students’ answers.
21. Teacher will provide assistance and modeling when needed.

E. Assessment/Evaluation plan

1. Formative

1. Student journals will be completed to demonstrate classification of materials as either magnetic or non-magnetic. A checklist will be used to document learning by either a check plus or check minus.
2. Student journals and the Can Magnetic Force Pass Through Anything handout will be completed to demonstrate identification of materials as allowing or not allowing magnetic forces to pass through them. A checklist will be used to document learning by either a check minus or check plus.
3. Students will demonstrate their knowledge of how to solve problems through scientific investigation by making at least one prediction and asking at least one future question based on observations recorded in their journal entries and by completing the Can Magnetic Force Pass Through Anything handout. A checklist will be used to document learning by either a check plus or a check minus.

V. Reflective Response

A. Report of Students’ Performance in Terms of States Objectives

B. Personal Reflection

1. Did the lesson fit in the time allotted? If not, why?
2. Did the students achieve the expectations of the objectives? What evidence supports this conclusion?
3. What could I have done differently to enhance my students’ learning?
4. Were the students actively engaged in the activity? What could have been done differently ti enhance engagement

VI. Resources

1. Young, R.M. (2009) *Magnets & Electricity Super Science Activities.* Westminster, CA: Teacher Created Resources, Inc.
2. Rockabye Butterfly: Magnet Painting! (n.d.). Retrieved April 3, 2015, from http://www.rockabyebutterfly.com/2011/10/magnet-painting.html