Brown Bag Science

An AskERIC Lesson Plan

Author: Judy Adair, Spring Creek Elementary, Broken Arrow, OK

Date: May 1994

Grade Level(s): 1, 2, 3, 4, 5

Subject(s):

- Science/Physics

OVERVIEW:

This is a hands-on science investigation on electricity. Students learn through the discovery method how electricity works. The student's natural curiosity and sense of exploration will enable them to explore and learn on their own with little input from the teacher.

PURPOSE:

The purpose of this investigation is to introduce students to the concept of electricity and dispel any fears they may have that they don't understand the concept. This is excellent for girls, who often feel that they don't or shouldn't understand electricity as well as boys.

OBJECTIVES: As a result of this activity, the students will:

1. Be able to draw and explain how an electrical circuit works.
2. Be able to define and use vocabulary associated with electricity. Vocabulary: circuits, electrons, force, conductors, switch, insulation
3. Be able to construct a simple circuit and a parallel circuit.
4. Be able to make an electrical motor work and add a switch to turn it on and off.

RESOURCES/MATERIALS: All items can be bought very inexpensively at Radio Shack or from Edmond Scientific Elementary Catalogue.

ACTIVITIES AND PROCEDURES:

1. The teacher will prepare ahead of time a kit for each two or three students. If students work in larger groups, some will not get hands on experience. Each kit will include a brown lunch sack, one C cell battery, two insulated copper wires, one battery holder and two brass battery clips, one small flashlight bulb and socket. All these items must be separate and in random order in the bag. The bag must be closed, sometimes I close it with one of the copper wires like a twisty.
2. Give each pair of students a bag and allow 10 minutes for exploration. During this time the teacher must remain quiet unless asked a question. The students will be very busy trying to find out what to do with the contents of the bag. Do not give any clues as to use of contents. This is exploration time.
3. Before the 10 minutes are up some students will have undoubtedly have made a simple circuit with the contents of the bag. At this time you can stop for discussion. Have the students explain what they did so others can follow. You can now talk about the concept of electricity, the flow of electrons through a conductor , discuss what things are conductors, etc. Discuss where the electricity comes from and where it goes, how does it make the light bulb light. Discuss how the battery stores electricity. How do we know that electrons are flowing?
4. After all students have been successful with the simple circuit, each pair must draw what they have done in their science log or on a piece of paper. Older kids will label all the parts of the circuit, etc.
5. At this time, I give each pair of students a second battery and let them experiment. Does the second battery change anything? Does the light get brighter or dimmer? Does the way the batteries are connected make any difference in the way the light works. Try different ways of connecting the batteries. Some students will make a parallel circuit. At this time stop and have the students tell what they did. Discuss the concept of parallel circuits. Each pair of students draw what they have done.
6. A follow up activity if you have time is to have switches available. For those students that finish quickly, they get a switch. See if they can connect it into the circuit to make the light come on and off. Discuss how electricity flows. Why does the electricity not cross over the switch when it is open? Does electricity jump? Again, each pair must draw what they have done. This completes the thinking process and makes the learning more personal.
7. Electrical motors can also be added. Students enjoy making small fans out of the motors. Each pair of students can exchange their light bulb and socket for a small electric motor and try to connect it into the circuit. Torn or cut paper makes great fan blades. Let the students experiment to find the best size and shape to make the fan go very fast.
8. The role of the teacher in this activity is to be a facilitator. Please refrain from your urge to teach. In this activity, students discover the concept of electricity. The less you show and tell the better.

TYING IT ALL TOGETHER:

1. Check each pair of students diagrams and leave small personal messages so they will know that you have looked at what they have done.
2. Encourage all students to share what they have learned with other students and parents.
3. I have done this activity with students in grades 1-5 and all have learned and had great fun doing so. For the younger students their drawings will be less sophisticated and you do not need to dwell on vocabulary. With older students, they will need to label and use the vocabulary correctly. Most students are so eager to get hands on experience in science and with this activity, all students can experience success.

Story Starters

An AskERIC Lesson Plan

Author: Frances Vitali
School or Affiliation: Lake Valley School, Crownpoint, NM
Endorsed by: These lesson plans are the result of the work of the teachers who have attended the Columbia Education Center's Summer Workshop. CEC is a consortium of teacher from 14 western states dedicated to improving the quality of education in the rural, western, United States, and particularly the quality of math and science Education. CEC uses Big Sky Telegraph as the hub of their telecommunications network that allows the participating teachers to stay in contact with their trainers and peers that they have met at the Workshops.

Date: May 1994

Grade Level(s): Kindergarten, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12

Subject(s):

- Language Arts/Story telling

Overview:

Children enjoy telling stories as much as they enjoy listening to them. Sometimes simple props such as masks, puppets and costumes take the attention away from the student so s/he can focus on the content and telling of the story. In using every day objects as props, students become more relaxed to let their story unfold naturally and creatively while others (the audience) enjoy the visual representations as well as the oral delivery.

Objective(s):

Students will be able to:

1. Orally tell different kinds of stories using the assistance of props.
2. Be a performing storyteller as well as a receptive member of the audience.

Resources:

Teacher: box, container, or paper bag

Students: odds and ends to contribute for prop box

Activities and Procedures:

1. Explain that not all stories are written down. Ask students for examples of stories they know are not written in books (oral history, family stories, etc.). Optional - Tell the story, "Knots on a Counting Rope" by Bill Martin and John Archambault as an example of a family story.
2. Ask students to think of the many different and unusual ways you can tell a story (mime, poetry, theater, plays, dance, ballet, etc.).
3. Take an empty box and have each student contribute something small to put in the box - pencil, button, penny, string, bobby pin, tissue, etc. (anything they freely are willing to give up for a while or are willing to donate without wanting it back).
4. Suggest that just as an actor/actress on stage has props and scenery, you are going to tell a story using the objects in the box as the props and scenery for **your** story.
5. Tell a short story using some (not all) of the objects from the box as you tell the story to the students.
6. Explain that all students will have a chance to tell a story using the props in the box.

Tying It All Together:

Storytelling is a special activity that may be reserved for special times or for all times keeping in mind respect for the storyteller and the audience. A ritual of lighting a candle during storytelling time can be observed.

Variations:

Students in the audience can illustrate stories being told stories may be told according to specific genre: Mystery, Horror, Comedy, Fiction, Biographical, Autobiographical, Science Fiction, etc.

Story Improvisation

- the telling of a story will include a given condition, setting, situation, or theme, etc.

Story Relay

- One student begins a story and another student can pick up the story where the previous student left off, followed by another student until the end of the story.

Story telling is an effective means of communication. I heard a storyteller once say, ' When you read a book, the audience connects with the pictures in the book. When you tell a story, the audience connects with you.'

Story Pyramid

An AskERIC Lesson Plan

Author: Donna Calder
School or Affiliation: Bullhead City Intermediate School, Bullhead City, AZ
Endorsed by: These lesson plans are the result of the work of the teachers who have attended the Columbia Education Center's Summer Workshop. CEC is a consortium of teacher from 14 western states dedicated to improving the quality of education in the rural, western, United States, and particularly the quality of math and science Education. CEC uses Big Sky Telegraph as the hub of their telecommunications network that allows the participating teachers to stay in contact with their trainers and peers that they have met at the Workshops.

Date: May 1994

Grade Level(s):

Kindergarten, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12

Subject(s):

- Language Arts/Whole Language

Overview:

This is a strategy to help students with comprehension. Could be used for character traits and relationships with other characters.

Purpose:

To make sure the students understand the story

Objectives:

Students will be able:

1. to read and understand a story line
2. to state the story problem
3. to state the solution to the problem

Materials:

overhead, transparency, paper, and pencils

Activity:

Prepare the transparency for the class to do as a class activity the first few times. Later the students should be able to do this on their own.

Story Pyramid

1. _____

2. _____

3. _____

4. _____

5. _____

6. _____

7. _____

8. _____

Have the students fill in the pyramid with the information asked for below.

On line

1. write the name of the main character
2. two words describing the main character
3. three words describing the setting
4. four words stating the story problem
5. five words describing one event in the story
6. six words describing a second event
7. seven words describing a third event
8. eight words describing the solution to the problem

The more the students work with this activity, the easier it will become. Have the students write a sentence for each line using the number of spaces as the amount of words for each sentence. Then they can write a sentence for each space for each line.

Tying It All Together:

Use this pyramid as an outline for a summary of the story.

Lesson Plan #: AELP-INT0112

The Clocks of Time

An AskERIC Lesson Plan

Submitted by: Stacie Smeltzer
Email: sdsst31+@pitt.edu

Date: September 15, 1999

Grade Level(s): 4, 5

Subject(s):

- Interdisciplinary
- Mathematics
- Science
- Social Studies

Duration: 45 minutes

Description: Children will be introduced to several types of time pieces from various periods in history. This lesson can be integrated with math. The students can review telling time. This lesson can also be integrated with science. The students can study astrology and how the movement of the earth, sun and moon relate to time.

Goals: The goal of this lesson is to familiarize students with the different types of clocks used thoughout time.

Objectives: The students will be able to:

1. place the clocks of history into the appropriate chronological time order.
2. draw and label their own futuristic clock.

Materials:

- various clocks
- watches and timepieces from the past and present
- timeline on a poster
- posterboard (6 sheets)
- markers
- crayons, etc.

- definition of a clock on a poster

Procedure:

Anticipatory Set:

To activate prior knowledge, ask the students to look at last night's assignment and give one reason why it is important to know what time it is.
To introduce the lesson, tell them we will be looking at the history of time and how clocks have played an important role throughout history.
To motivate the children and apply the lesson to their lives, have them raise their hands if they have at least one clock in their houses. Then, have the students guess how many clocks the teacher has in his or her house.

Continuation of Lesson:

Tell the students the definition of a clock while displaying it on the board.
Explain the time line that is on the board.
Describe B.C. and A.D.
Explain each clock, when it was invented, and show it to the class.
After showing each clock, put the name on the time line by the correct date.
The students will take turns putting the clocks in time order.
Explain all of the directions for the final project before placing them into groups of four.
Each group will have a *Recorder* , *Timekeeper* , *Reporter,* and *a Materials Person* .
Tell them that they have 15 minutes to draw a picture of a futuristic clock, give it a name and write a few sentences about the way the clock works.

Closure:

At the end of the lesson, the Reporter from each group will present his/her group' s' futuristic clock and explain how their clock works and the name of it.

Assessment:

The teacher can evaluate the students' ' understanding of the history of clocks by seeing if they can place the clocks in the right time order. The teacher can assess the students by listening and observing the cooperative groups to make sure they are on task. The teacher can also observe each group' 's presentation and listen to the explanations.