

Trees are Important

Name: Wendy Douglas

Level: K ~ 2nd grade

Science Standards: A.2, B.1, B.2 (magnifying glass), D.3 (recycling)

Writing Standards: WR.2 (E.A.4)

Cultural Standard D.4: culturally knowledgeable students gather oral and written history information from the local community and provide an appropriate interpretation of its cultural meaning and significance.

Science Concept: TLW (the learner will) understand that trees are important for our use in everyday life.

Materials: Paper, magnifying glasses, rolls of tissue or toilet paper, a mixing bowl, a spoon, a screen (we used an old window screen), water, liquid starch, a rolling pin, paper towels or newspaper to use as an absorbent.

Vocabulary: cellulose (plant fiber), pulp, slurry, paper mill, fibers, recycling

Gear Up: Do a K-W-L with students. What do they know about trees? What would they like to learn (i.e. making paper)?

Process Skills: Communicating,

Explore:

Tear paper into small pieces, asking students what do you think paper is made of? (wood). How do you think paper is made? (paper mills: pulp).

Have students examine torn edges of the paper with a magnifying glass and describe what they see. (explain fibers) Have students look at their clothes for fibers, explain everything is made up of parts that do not resemble the final object. Give a brief history of paper (plant product).

Suggest students make their own paper by recycling tissue.

Paper Making. Put about 25 pieces of toilet paper squares into a large mixing bowl. Add water and liquid starch to make a slurry. Allow children opportunities to stir and make observations. Next, over a sink, pour the slurry onto a the window screen allow children to press down on a paper towel to squeeze out excess water. Place pulp on a stack of newspapers. Lay small flowers, leaves, or grass on pulp if you want. Cover paper with more newspaper and roll with a rolling pin to squeeze out water. Lift off the top newspaper. Gently peel paper and allow to dry on dry newspaper. Recipe available online at www.infostuff.com/kids/paper.html.

Process Skills: Observing, Communicating, Measuring, Predicting

Generalize:

What happened when we added the starch and water to the paper?

What is paper made of? (wood fibers)

What are some vocabulary words we used? Describe what it means.

What is the plant fiber called that holds paper together? (cellulose)

Describe the steps of how we made paper? (make a class recipe)

Process Skills: Communicating

Apply/Assess:

Think of something that changes by adding something to it (i.e. melting an ice cube; making cookies). Draw what happens to change it.

Process Skills: Observing, Communicating

Extensions:

TLW draw a picture of the fibers observed (torn paper, clothes, skin).

TLW compare and contrast fibers, verbally or in drawings.

TLW have a finished product with recipe to take home and practice paper making.

TLW use the finished paper product in the classroom writing center.

TLW create a recycling area where they can put paper waste for future paper recycling projects.

Process Skills: Observing, Communicating

Scoring Rubric

Emerging (1):

- TLW attempted some of the activities in the lesson.
TLW is able to answer the question: why trees are important for our use in everyday life?.

Developing (2):

- TLW participate in most activities outlined in the lesson.
- TLW understand some of the physical observable changes in the properties of matter.
TLW record at least one observation in their journal.
TLW attempt at least one extension activity

Proficient (3):

- TLW fully participate in the activities in this lesson.
TLW is able to answer the question: why trees are important for our use in everyday life?.
- TLW communicate some facts about the oral or written history about the local community.
- TLW understand the physical and observable changes in the properties of matter.
- TLW record 1-2 observations in journal
- TLW attempt 2-3 extension activities

Advanced (4):

- TLW fully participates in the activities in this lesson.
- TLW is able to answer the question: why trees are important for our use in everyday life?.
- TLW communicate several facts about the oral or written history about the local community.
- TLW understand the physical and observable changes in the properties of matter.
- TLW record 1-2 observations in journal
- TLW attempt 2-3 extension activities