

Dust Hunt

Grades K-2

National Science Education Standards (K-4)

- Content Standard A: Science as Inquiry
Abilities necessary to do scientific inquiry;
Understanding about scientific inquiry
- Content Standard B: Physical Science
Properties of objects and materials
- Content Standard D: Earth and Space Sciences
Properties of Earth materials

Materials

- Clear tape (two strips per student)
- White paper (one sheet per group)
- Magnifying glass (one for each student)

Preparation

Preparing the tape strips: cut two 5 centimeter (2 inch) strips of clear tape for each student.

Distributing the tape strips: stick the strips onto the rim of plastic plates, one plate for each group. The tape strips will look like small flower petals on the plate, making it easier for students to pick up the strips.

Regular copy paper (8.5 x 11 inches) will work for this activity. However, larger sheets allow students more room to work and freedom to organize and describe their samples. In addition, larger sheets of paper will allow students to easily display their samples for their show and tell (see Explain – Show & Tell).

Activity

Engage: Ask students to share what they know about dust:

- What does it look like?
- Where can you find it?
- What size is it?

Tell students that they will be hunting for dust in their classroom. Model the dust sample collecting procedure:

- Pick up a tape strip and show students how to collect samples of dust.
- Stick the tape strip to a surface, the floor, or clothing, then gently pull it back.
- Stick the tape strip to a white sheet of paper.

Ask students how they think they should examine the dust samples.

Explore - Dust Hunt:

Gather dust samples: Assign each group a separate part of the classroom to collect dust, then pass out the plates of tape strips,

white paper, and magnifying glasses to the groups. Give students about 10 minutes to gather samples, and stick them on their paper.

What did you find? Allow about 20 minutes for students to examine their samples and set up for “show and tell.” Encourage them to examine their samples together as a group. Second grade students may write simple and short descriptions beside their samples. Circulate among the groups to guide them along as they examine their dust samples. If necessary, prompt them with questions about the properties of the dust (size, shape, color, etc.), and how they think the dust came into the classroom. Some groups may organize their samples according to the collection location.

Explain and Elaborate – Make a Show & Tell:

Ask each group to share the results of their investigation during a short “show and tell” with the class. Each group should:

- describe the three most important characteristics of the dust they found.
- explain how they think the dust came into the classroom based on its characteristics and other clues.
- elaborate on how they think that they could collect dust in the air or in outer space.

After students have completed their presentations, explain to them that astronomers are looking for dust in space with a new telescope in space. Astronomers want to understand how tiny dust particles in space can become planets like the Earth.

Evaluate

50 points: students describe their dust samples in terms of properties such as size, shape, and color.

25 points: They explain where the dust came from in terms of clues: the dust’s properties, where they collected samples, and big objects that could be made of the dust particles. For instance, students may explain that chalk dust collected near the chalk board came from chalk, or colored lint collected from the floor came from clothing, or brown powdery dust collected near a doorway came from the dirt around the playground outside.

25 points: students invent creative ways based on their own dust hunt to collect dust in the air or in outer space. For instance, make a sticky tape net, or leave tape out (sticky side up) to trap dust over time.

Total: 100 points

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Texas Essential Knowledge and Skills

Science:

§112.11. grade K-1 (b)-5(A) Matter and energy: The student knows that objects have properties and patterns. The student is expected to: observe and record properties of objects, including relative size and mass, such as bigger or smaller and heavier or lighter, shape, color, and texture.

§112.11-12. grade K-1 (b)-2(A) ask questions about organisms, objects, and events observed in the natural world.

§112.11-12. grade K-1 (b)-2(B) plan and conduct simple descriptive investigations such as ways objects move.

§112.11-13. grade K-2 (b)-2(C) collect data and make observations using simple equipment such as hand lenses, primary balances, and non-standard measurement tools.

§112.11-13. grade K-2 (b)-2(D) record and organize data using pictures, numbers, and words.

§112.12-13. grade 1-2 (b)-2(E) communicate observations and provide reasons for explanations using student-generated data from simple descriptive investigations.