

DOCUMENT RESUME

ED 480 659

SE 068 011

AUTHOR Rushton, Erik; Ryan, Emily; Swift, Charles
TITLE Touch and Discover. Grades PreK-2.
INSTITUTION Tufts Univ., Medford, MA.
PUB DATE 2001-00-00
NOTE 9p.; Produced by the Office for Technology and Industry
Collaboration. For other activities in this series, see SE
068 012-041.
AVAILABLE FROM Web site: www.prek-12engineering.org/activities/ .
PUB TYPE Guides - Classroom - Teacher (052)
EDRS PRICE EDRS Price MF01/PC01 Plus Postage.
DESCRIPTORS *Classification; Early Childhood Education; *Hands on
Science; *Identification; *Interdisciplinary Approach;
Science Activities; Science Instruction; Sensory Experience;
Student Motivation; Tactile Stimuli; *Tactual Perception;
Teamwork

ABSTRACT

Students work in pairs or small groups to identify and categorize various objects. One student is blindfolded and the other student chooses five objects for his/her partner to identify. The blindfolded student has to describe and try to identify the object based solely on touch. Both students then record their data, describing the objects first as human-made or natural, then living or non-living, and finally physical characteristics. This activity can be modified to challenge different age groups and can include brainstorming uses for the materials, not just classification. This activity uses a time frame of 30-60 minutes and goes well with a lesson on animal classification. (Author/SOE)

This document has been reproduced as received from the person or organization originating it.

Minor changes have been made to improve reproduction quality.

Points of view or opinions stated in this document do not necessarily represent official OERI position or policy.

Activity: **Touch and Discover**

GRADE LEVELS: PK-2

SUMMARY:

Students work in pairs or small groups to identify and categorize various objects. One student is blindfolded and the other student chooses five objects for their partner to identify. The blindfolded student has to describe and try to identify the object based solely on touch. Both students then record their data, describing the objects first as human-made or natural, then living or non-living, and finally physical characteristics. This activity can be modified to challenge different age groups. It can include brainstorming uses for the materials not just classification. This activity would go well with a lesson on animal classification.

LEVEL OF DIFFICULTY [1=Least Difficult : 5=Most Difficult]

4-Difficult

TIME REQUIRED

30-60 minutes

COST

None

STANDARDS:

- 1.1 Identify and describe characteristics of natural (e.g. wood, rocks, wool) and human -made materials (e.g. Styrofoam, plastic, fabric).
- 1.2 Identify and explain some possible uses and advantages for natural and human-made materials.

WHAT WILL THE STUDENTS LEARN?

www.prek-12engineering.org
Copyright © 2001
All Rights Reserved

PERMISSION TO REPRODUCE AND
DISSEMINATE THIS MATERIAL HAS
BEEN GRANTED BY

M. NEWELL

TO THE EDUCATIONAL RESOURCES
INFORMATION CENTER (ERIC)

1

BEST COPY AVAILABLE

1

2

Build observation skills by using tactile perception to describe and distinguish objects.

How to categorize and sort objects in a logical fashion.

BACKGROUND INFORMATION:

RECOMMENDED RESOURCES:

MATERIALS:

Blindfolds or small containers (enough for half the class)

Make sure there is a large enough selection of objects so the children will have their own objects and each partner will identify different objects.

Rocks

Pinecones

Leaves

Seashells

Wood

Plastics

Pen/pencil

Paper

Styrofoam

Fabric

Leather

Wool

Cotton

Cork

Sponges (sea and artificial)

Fruits

Vegetables

PREPARATION:

Large box filled with different objects from the materials list and whatever other materials the teacher wishes to use

Blindfolds or small containers (whichever the teacher wishes to use)

DIRECTIONS:

Prepare materials ahead of time. Put the various objects in a box or on a table out of view of the children. Make sure there is a large enough selection so that the children will be able to have their own objects and that each partner will identify different objects. Also prepare either enough blindfolds for each group or small boxes. The boxes can be used in place of blindfolds if desired. Small ice cream containers or tissue boxes can be used for the children to put their hands in to feel the objects.

Discuss with the children ahead of time different methods for grouping objects. Also discuss the difference between natural and human made, and living and non-living.

Have students break up in groups (ideally two to a group), and get their blindfolds.

Begin the activity:

1. Blindfold partner A. Partner B go to the table and choose five objects.
2. Without letting partner A see what you have chosen categorize the objects using the worksheet.
3. Partner A holds each object one at a time, examining it thoroughly with their hands. Describe the object to partner B.
4. Partner B records the data on the worksheet.

5. After all five objects have been described by partner A, repeat the activity, this time let partner B be blindfolded, and partner A chose the objects to be identified.
6. Once both partners have had a chance to identify objects using only touch, explore how the ten objects you have identified can be grouped. Think about how they are related to each other, and their different uses.

Ask the children to expand on this activity by bringing five objects from home. These objects should be grouped according to a characteristic that they share. (Note: Make sure that the children know not to bring in anything that may be sharp or dangerous.)

Extensions:

Have students describe an object to the class.

This can help not only the student in developing their language and descriptive skills, but also help all the students with listening and visualization skills.

A matching game can be developed, where the child has to match what they feel with an object from a group of objects that they can see.

Discussion:

How did each group categorize the different objects?

Is there only one right way to group the objects?

Which ways are better? What are the best characteristics to use when grouping objects?

How easy/hard was it to identify and describe objects using only touch? Why?

Why is it good to practice using different observation skills?

Notes:

The more experienced the children are the more challenging you can make the activity. The children can pick out five similar objects for their partners to identify, or pick out five objects that they grouped in a certain way and have their

partners identify the object and also identify how their partner grouped the objects.

INVESTIGATING QUESTIONS:

How can different objects be categorized and described using only your sense of touch?

Why is it important to be able to categorize different objects? How do engineers use information like this to help them?

REFERENCES:

Academy Curricular Exchange Columbia Education Center Science. [Online]. July 17, 2001. <http://ofcn.org/cyber.serv/academy/ace/sci/cecsci/cecsci153.html>

SAMPLE RUBRIC:

As the children develop their skills they should use more descriptive words and more sophisticated methods of sorting. Beginners should be expected to sort according to shape and color, while the more advanced student should be able to sort according to uses and material. Simple, easily distinguishable objects should be used to start, with an increase in difficulty and similarity of objects for more proficient students. The basic ideas that should be obtained from this activity are that objects have certain characteristics that allow them to be grouped with similar object and that grouping can help you to understand and use these objects.

TOUCH AND DISCOVER WORKSHEET

Category	Partner		Partner	
	A	B	A	B
Object				
Size (large/medium/small)				
Shape				
Texture				
Use				
Other:				
Category	Partner		Partner	
	A	B	A	B
Object				
Size (large/medium/small)				
Shape				
Texture				
Use				
Other:				

Activity Evaluation Form

Activity Name: _____

Grade Level the Activity was implemented at: _____

Was this Activity effective at this grade level (if so, why, and if not, why not)?

What were the Activity's strong points?

What were its weak points?

Was the suggested Time Required sufficient (if not, which aspects of the Activity took shorter or longer than expected)?**Was the supposed Cost accurate (if not, what were some factors that contributed to either lower or higher costs)?****Do you think that the Activity sufficiently represented the listed MA Framework Standards (if not, do you have suggestions that might improve the Activity's relevance)?****Was the suggested Preparation sufficient in raising the students' initial familiarity with the Activity's topic (if not, do you have suggestions of steps that might be added here)?****If there were any attached Rubrics or Worksheets, were they effective (if not, do you have suggestions for their improvement)?**

Please return to: CEEO
105 Anderson Hall
Tufts University
Medford, MA 02155

SEA0011

U.S. Department of Education
Office of Educational Research and Improvement (OERI)
National Library of Education (NLE)
Educational Resources Information Center (ERIC)

Reproduction Release
(Specific Document)

I. DOCUMENT IDENTIFICATION:

Title: PreK-12 Engineering Activities

- 1) Touch and Discover, Grades PreK-2
<http://www.prek-12engineering.org/data/d2/Touchdiscover.pdf>
- 2) Invent a Backscratcher from Everyday Materials, Grades PreK-2
<http://www.prek-12engineering.org/data/d28/Backscratcher.pdf>
- 3) Compare Human-Made Objects with Natural Objects, Grades PreK-5
<http://www.prek-12engineering.org/data/d34/HumanvsNatural.pdf>
- 4) Do Different Colors Absorb Heat Better?, Grades PreK-2
<http://www.prek-12engineering.org/data/d37/Absorbheat.pdf>
- 5) Which Roof is Tops?, Grades PreK-2
<http://www.prek-12engineering.org/data/d44/Rooftops.pdf>
- 6) Make Your Own Recycled Paper, Grades PreK-2
<http://www.prek-12engineering.org/data/d56/Recycle.pdf>
- 7) Build an Approximate Scale Model of an Object Using LEGOs, Grades 3-5
<http://www.prek-12engineering.org/data/d3/LegoScaleModel.pdf>
- 8) Design Weather Instruments using Lego Sensors, Grades 3-5
<http://www.prek-12engineering.org/data/d4/LegoWeather.pdf>
- 9) Space Shelter, Grades 3-5
<http://www.prek-12engineering.org/data/d5/SpaceShelter.pdf>
- 10) Build a Bird House, Grades 3-5
<http://www.prek-12engineering.org/data/d6/BirdHouse.pdf>
- 11) Ball Bounce Experiment, Grades 3-5
<http://www.prek-12engineering.org/data/d6/BallBounce.pdf>
- 12) Make an Alarm!, Grades 3-5
<http://www.prek-12engineering.org/data/d11/MakeAlarm.pdf>
- 13) Design Packing to Safely Mail Raw Spaghetti, Grades 3-5
<http://www.prek-12engineering.org/data/d17/MailSpaghetti.pdf>
- 14) Disassemble a Click Pen, Grades 3-5
<http://www.prek-12engineering.org/data/d33/clickPen.pdf>

- 15) Construct And Test Roofs for Different Climates, Grades 3-5
<http://www.prek-12engineering.org/data/d35/ClimateRoof.pdf>
- 16) Compare Fabric Materials, Grades 3-5
<http://www.prek-12engineering.org/data/d36/Fabric.pdf>
- 17) A House is a House for Me, Grades 3-5
<http://www.prek-12engineering.org/data/d52/House.pdf>
- 18) Water Filtration, Grades 3-5
<http://www.prek-12engineering.org/data/d53/Water Filtration.pdf>
- 19) What is the Best Insulator: Air, Styrofoam, Foil, or Cotton?, Grades 3-5
<http://www.prek-12engineering.org/data/d54/BestInsulator.pdf>
- 20) Design a Recycling Game!, Grades 3-5
<http://www.prek-12engineering.org/data/d55/Recycling.pdf>
- 21) Tower Investigation and the Egg, Grades 6-8
<http://www.prek-12engineering.org/data/d7/TowerEgg.pdf>
- 22) Wimpy Radar Antenna!, Grades 6-8
<http://www.prek-12engineering.org/data/d10/WimpyAntenna.pdf>
- 23) Portable Sundial, Grades 6-8
<http://www.prek-12engineering.org/data/d30/PortableSundial.pdf>
- 24) An Introduction To Loads Acting on Structures, Grades 6-8
<http://www.prek-12engineering.org/data/d31/IntroLoads.pdf>
- 25) Design Your Own Rube Goldberg Machine, Grades 6-8
<http://www.prek-12engineering.org/data/d32/RubeGoldberg.pdf>
- 26) Building Tetrahedral Kites, Grades 6-8
<http://www.prek-12engineering.org/data/d38/tetrakites.pdf>
- 27) Do as the Romans: Construct an Aqueduct!, Grades 6-8
<http://www.prek-12engineering.org/data/d39/Aqueduct.pdf>
- 28) Build an Earthquake City!!, Grades 6-8
<http://www.prek-12engineering.org/data/d40/EarthquakeCity.pdf>
- 29) Design a Parachute, Grades 6-8
<http://www.prek-12engineering.org/data/d41/Parachute.pdf>
- 30) The Squeeze is On, Grades 6-8
<http://www.prek-12engineering.org/data/d42/Squeeze.pdf>
- 31) Stop The Stretching, Grades 6-8
<http://www.prek-12engineering.org/data/d43/StopStretching.pdf>
- 32) Speaker Project, Grades 9-10
<http://www.prek-12engineering.org/data/d13/Speaker.pdf>

Author(s): Erik Rushton, Emily Ryan, Charles Swift

Corporate Source: Tufts University

Publication Date:

II. REPRODUCTION RELEASE:

In order to disseminate as widely as possible timely and significant materials of interest to the educational community, documents announced in the monthly abstract journal of the ERIC system, Resources in Education (RIE), are usually made available to users in microfiche, reproduced paper copy, and electronic media, and sold through the ERIC Document Reproduction Service (EDRS). Credit is given to the source of each document, and, if reproduction release is granted, one of the following notices is affixed to the document.

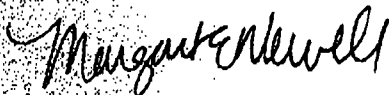
If permission is granted to reproduce and disseminate the identified document, please CHECK ONE of the following three options and sign in the indicated space following.

- Check here for Level 1 release, permitting reproduction and dissemination in microfiche or other ERIC archival media (e.g. electronic) and paper copy.
- Check here for Level 2A release, permitting reproduction and dissemination in microfiche and in electronic media for ERIC archival collection subscribers only.
- Check here for Level 2B release, permitting reproduction and dissemination in ERIC archival collection microfiche only.

Documents will be processed as indicated provided reproduction quality permits. If permission to reproduce is granted, but no box is checked, documents will be processed at Level 1.

I hereby grant to the Educational Resources Information Center (ERIC) nonexclusive permission to reproduce and disseminate this document as indicated above. Reproduction from the ERIC microfiche, or electronic media by persons other than ERIC employees and its system contractors requires permission from the copyright holder. Exception is made for non-profit reproduction by libraries and other service agencies to satisfy information needs of educators in response to discrete inquiries.

Signature:



Printed Name/Position/Title: Margaret Newell, Associate Provost for Research

Organization/Address: Tufts University
136 Harrison Avenue, Suite 75K-401
Boston, MA 02111

Telephone: 617-636-6550

Fax: 617-636-2917

E-mail Address: peter.wong@tufts.edu

Date:

8/15/2003

III. DOCUMENT AVAILABILITY INFORMATION (FROM NON-ERIC SOURCE):

If permission to reproduce is not granted to ERIC, or, if you wish ERIC to cite the availability of the document from another source, please provide the following information regarding the availability of the document. (ERIC will not announce a document unless it is publicly available, and a dependable source can be specified. Contributors should also be aware that ERIC selection criteria are significantly more stringent for documents that cannot be made available through EDRS.)

Publisher/Distributor:

Address:

Price:

IV. REFERRAL OF ERIC TO COPYRIGHT/REPRODUCTION RIGHTS HOLDER:

If the right to grant this reproduction release is held by someone other than the addressee, please provide the appropriate name and address:

Name:

Address:

V. WHERE TO SEND THIS FORM:

Send this form to:

ERIC Clearinghouse for Science, Mathematics, and Environmental Education
Acquisitions
1929 Kenny Road
Columbus, OH 43210-1080

Telephone: (614) 292-6717

Toll Free: (800) 276-0462

FAX: (614) 292-0263

e-mail: ericse@osu.edu

WWW: <http://www.ericse.org>

EFF-088 (Rev. 9/97)