

Going Buggy!

Marianne Strayton, Clarkstown Central School District

Grade Level Cluster: K - 1

LEARNING CONTEXT

Students will use their knowledge of insects, along with photographic and multimedia resources, to create a model of their favorite insect out of recycled and craft materials.

This is jumping-of point for the unit Insects/Creep Crawlies within a K –1 classroom. It integrates the science content of living things with the science skills of observing, measuring, classifying, and comparing, as well as incorporates math and technology. This activity can also be repeated as a culmination to the unit on insects by inviting students to create a fantasy insect from their knowledge and imagination.

Math Skills

- 1:1 correspondence
- measurement
- space shapes

Science Process Skills

- observing
- measuring
- communicating
- comparing (through discussion/group sharing)
- classifying (through discussion/group sharing)

Technology

- design & construct

New York State Standards

Standard 2— Information Systems

Standard 3—Mathematics

Standard 4—Science

Standard 5—Technology

Standard 6—Interconnectedness: Common Themes

RESOURCES NEEDED FOR TEACHER AND STUDENTS

Materials

- pompoms
- straws
- toilet rolls
- pipe cleaners
- google eyes
- beads
- tissue paper
- clear wrap
- round toothpicks
- paint
- pasta
- tape
- glue
- scissors
- recycled materials

Software

- Eyewitness Encyclopedia on Nature (CD-ROM software)
- Encarta Encyclopedia Online

Books

- The Big Bug Search
- A Butterfly is Born
- The World of Ants
- First Discovery: Ladybugs
- Bugs
- Insect Homes
- Insect Lives
- Inside a Honeycomb
- Honeybees

Other

- Discovery Channel: 3-D Bugs for ViewMaster
- Insect models: butterflies, ant, bee

INSTRUCTIONAL AND ASSESSMENT PLAN

This learning experience takes four 20-30 minute blocks. The first three blocks can be done at design and technology centers/stations set up for 3-4 children to work at a time. The last block, comparing the insects, is a whole-class experience.

Depending on the class, this lesson can be done as individual, partner, or small group projects. It is suggested that no more than three children work together at this age level for such a project.

Especially if this is the students' first experience designing and creating something independently, follow the procedure one step at a time with all children on same step. For example, everyone must look through magazines, books, etc., and pick an insect before anyone goes further. Have everyone design the insect and get it "checked" before anyone moves on to constructing.

Any variations in design occurring DURING construction must be "okayed" by teacher before implemented.

Children may only use the materials they recorded in *Things I Need* section of Design Brief, unless changes are checked with the teacher.

Procedure

Instruction to students:

Using the materials provided, as well as books and your imagination, create a model of your favorite insect.

- Look through and read magazines, books, slides, computer software, and any other materials provided in the design and technology stations to select your favorite insect.
- Find two or three pictures to use for reference.

Directions for making model:

1. List all body parts and special features of the insect.
2. Choose items that could represent those parts for the model. Keep in mind size (proportion), shape, and function of the parts.
3. Draw a sketch on the Design Brief of what the insect will look like.
4. Label the body parts on the picture.
5. Use the *Things I Need* page of the Design Brief to list (draw and/or write) the materials needed for construction of each body part.
6. Conference on the plan with the teacher to have it approved.
7. Construct your insect.
8. Draw a picture of the final model in the Design Brief.
9. Complete the *About My Insect* section of the Design Brief.

Instructions to teacher:

- Join class together to share their insects. Have students compare models. What parts do all the insects have in common? What parts are different? Sort insects based on one of the different characteristics, such as fly or crawl. Sort in other ways.
- Display insects and allow children to write positive comments about other students' models on corresponding sheets.
- Evaluate attitudes about the project.

Assessment

Assessment takes place using informal observations of student work and discussions, a Going Buggy rubric, and, if used, the Venn Diagram. Two rubrics are attached. One is a rubric specific to Going Buggy, which can be completed by the student or by the teacher. The second is a Design and Technology Project rubric that can be used for most K-1 MSTe construction projects. It is designed for use by the teacher, although the students begin to understand the expectations and the rubric itself when it is used for many projects throughout the year.

REFLECTIVE COMMENTS

My students were much closer observers during and after this activity than when they started. Children at all ability levels were challenged, and everyone enjoyed the project. During subsequent lessons, students took ownership "their insect" and seemed more attentive to the instruction. The Venn Diagrams also integrated ELA standards with MSTe standards. I found that by starting with the insect model, the children were better able to make material selections for their fantasy insects as well as other later Design and Technology projects. It enabled them to try various materials and observe materials other children used as well.

This learning experience was an enjoyable one for me as well. I was better able to assess the levels my children were at from their ability to both compare and contrast and observe. Also, I was able to generate more parent involvement through a class "Giving Tree" which supplied most of the materials used for this project. The parents felt more involved, and subsequently, better working relationships developed between the students, the parents, and myself.

GUIDANCE FOR TEACHERS

Discussion Questions

- What are you using for _____ (body part)? Why?
- How many ____ (body part) did you notice in the picture?
- What made you think of using _____?
- Did you read anything interesting about that insect?

- Did you look at other pictures of that insect? How did they compare?
- Is your model bigger or smaller than the real insect?
- What else could you use to make that part?
- How do you think that an insect uses _____ (certain body part)? How could you tell/What made you think that?

Extended Activities

1. Create a class Venn Diagram comparing and contrasting real insects with the model insects.
2. Find the longest or largest model in the class. Find the smallest or shortest model in the class.
3. List materials used for each body part and explain how it is similar to the real body part. For example, pipe cleaners were used for the legs because they are long and pointy.
4. For upper grades, find the ratio of the size of the real insect to the model insect.
5. Create a class graph of favorite Insects.
6. Create class Inquiry Chart on which each student can fill out information on his/her model. For example, does it have wings? How many body parts does it have? This would add a more visual component to the comparing done during the lesson.
7. As a culminating experience to insects, allow the students to use knowledge and understanding to create fantasy insects that have the same characteristics as all other insects.

GUIDANCE FOR STUDENTS

Design Brief (attached)

Design Brief

NAME: _____



Goin' Buggy!

My insect will be a _____

Books that will help me:

SKETCH:

ABOUT MY INSECT

My insect is a _____.

My model is _____ inches long. The color of my insect is _____.

My insect is special because _____

_____.

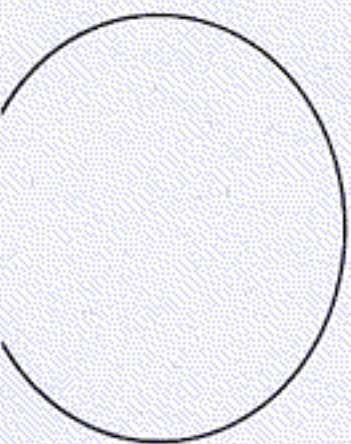
My insect lives _____.

My favorite characteristic of my insect is _____

_____.

My model is _____.

(How do you feel about your model?)



2 bugs design brief

CHECKLIST:

- ☐ head
- ☐ thorax
- ☐ abdomen
- ☐ 6 legs
- ☐ 2 antennae
- ☐ eyes
- ☐ wings?
- ☐ stinger?
- ☐ other special parts?

FINAL MODEL

Going Buggy Design and Technology Rubric

ACTIVITY	4	3	2	1
Concept	Student understood all aspects of concept	Student understood most aspects of concept	Student understood some aspects of concept	Student did not understand concept
Clean-up	Student helped clean up more than his/her space	Student cleaned up his/her own space	Student did some clean-up	Student did not clean up
Cooperation	Student helped partner learn or let partner help him/her learn	Student worked together with partner	Student worked somewhat with partner	Student did not work with partner
APPLICATION				
Reasoning	Student's reasons were clear and followed concept accurately	Student's reasons were clear	Student had an erroneous reason for creation	Student had no reason for creation
Neatness	Student worked very carefully and neatly	Student worked with care	Student worked with some care	Student worked carelessly
Originality	Student created different design with detail	Student created different design	Student created similar design	Student followed example
PRESENTATION				
Content	Student showed model, related it to the concept, and elaborated	Student showed model and related it to the concept	Student showed model but did not explain how it related to concept	Student did not explain model
Voice	Student was very audible, clear, and understandable	Student was audible and understandable	Student was audible, but difficult to understand	Student was inaudible
OTHER				

COMMENTS:



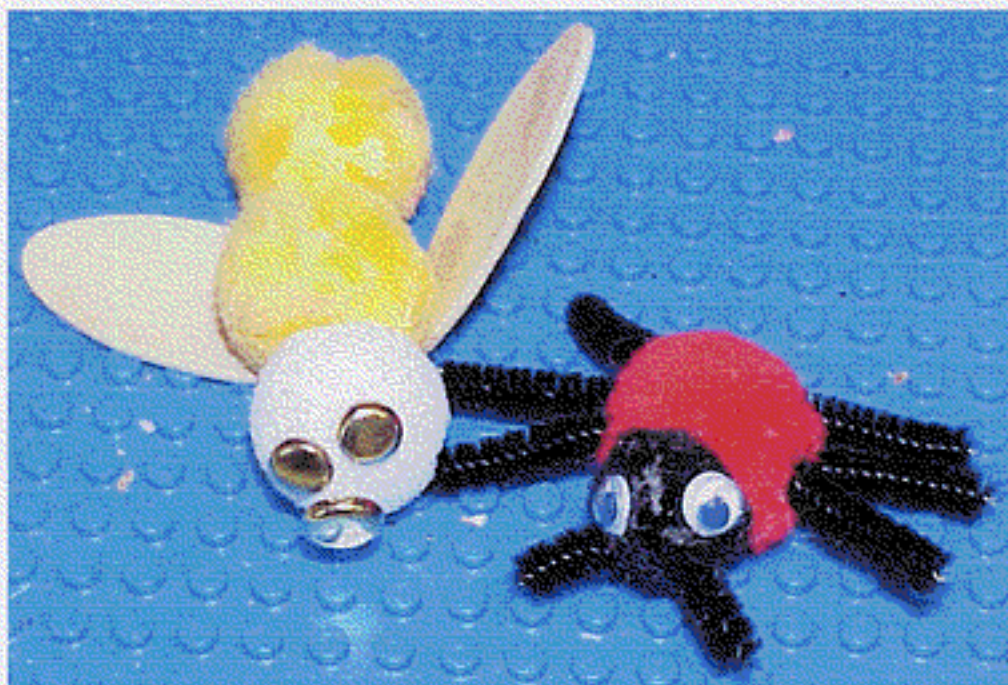
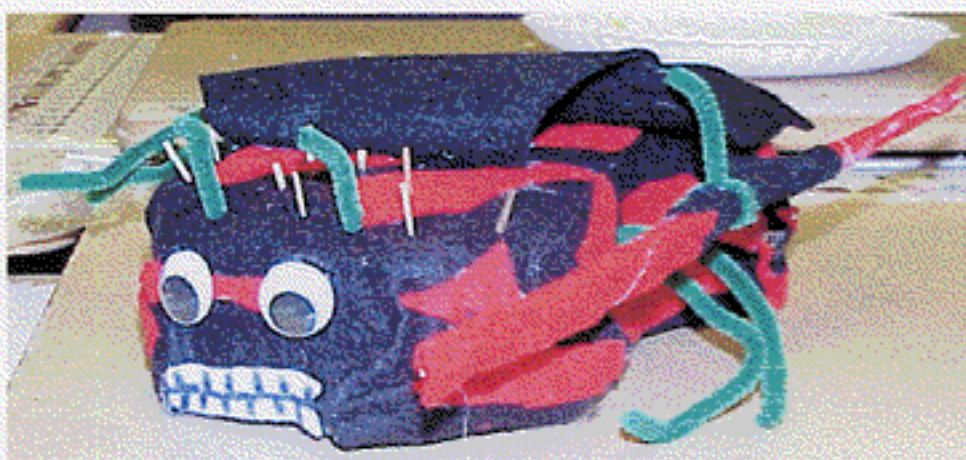
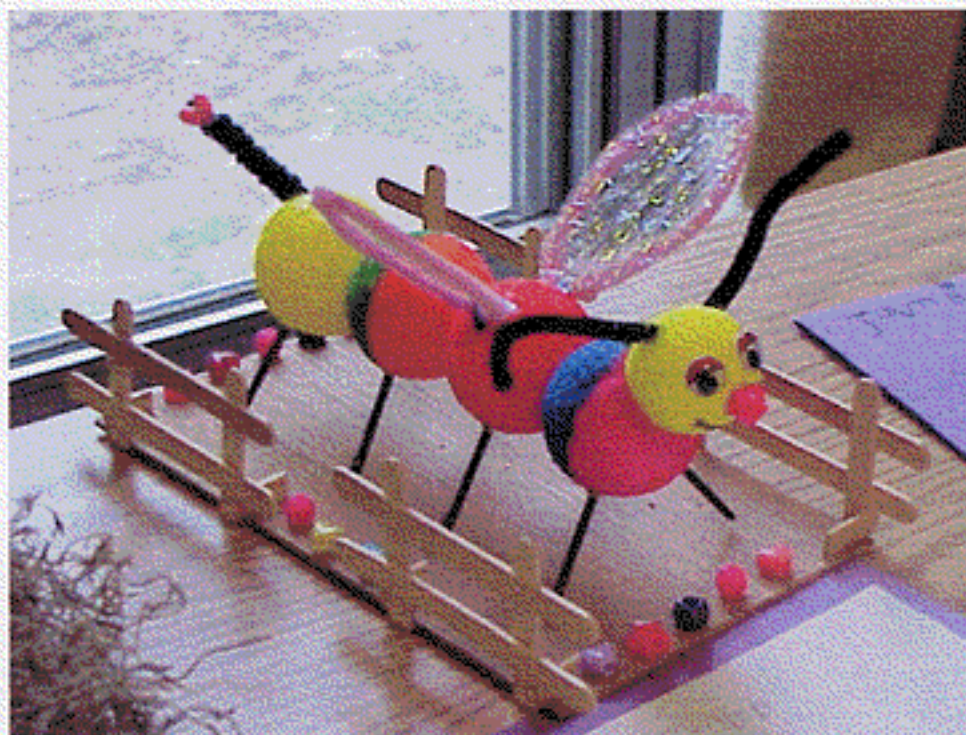
Going Buggy!

Name: _____

<u>Insect Model</u> Did I make all the body parts on my model?				
<u>Materials</u> Did I use materials that resembled the real insect?				
<u>Clean-up</u> Did I clean up my area neatly after constructing?				
<u>Process</u> Did I use my design portfolio to work in small steps?				
<u>Communication</u> Did I explain my model completely, giving clear reasons for different parts?				
<u>Fun</u> Did I like this project?				

I learned that: _____

Examples of Student Work



THE IDITAROD SLED

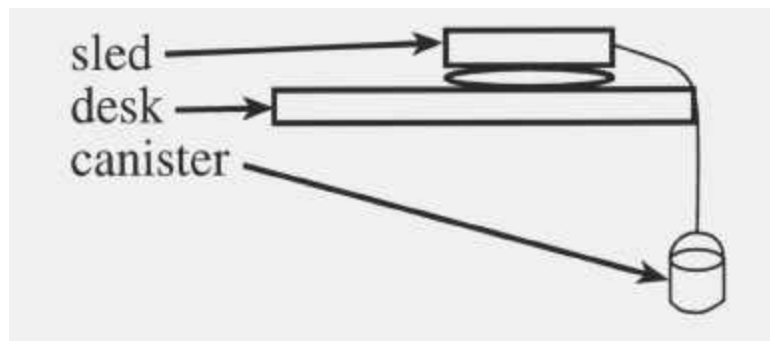
Joan Grossman and Bob Walters, Ithaca City School District

Grade Level Cluster: 2-4

LEARNING CONTEXT

Students engage in a unit in which they study the Iditarod dog sled race. The students learn about the geography, history, and culture of Alaska as well as the history of the race. In the Iditarod sled part of the unit, the emphasis is on mathematics and technology.

Students work in pairs to design and construct a model Iditarod sled that will carry 25 pennies across three different surfaces (wax paper, 600 grit sand paper, and the table top). The sleds are designed to be pulled by connecting one end of a string to the sled and the other end to a 35-mm film canister hanging over the edge of the table. Pennies are added to the film canister until the sled is pulled across the desk. Students hypothesize how many pennies would be required to pull the sled on each different surface.



This sled activity supports the following New York State Standards:

Standard 1 - Analysis, Inquiry, and Design

Key ideas addressed:

- Scientific Inquiry
- Engineering Design

Standard 3 – Mathematics

Key ideas addressed:

- Modeling/Multiple Representation
- Measurement

Standard 5 – Technology

Key ideas addressed:

- Engineering Design
- Tools, Resources and Technological Processes

RESOURCES NEEDED FOR TEACHER AND STUDENTS

Materials

- index cards (3" x 5")
- Popsicle sticks
- paper clips
- pennies
- wood glue
- extra fine (600 grit) sand paper
- wax paper
- string
- empty 35-mm film canisters
- floor plan or map of school building

Tools

- scissors
- rulers
- push pin

INSTRUCTIONAL AND ASSESSMENT PLAN

On the first day of the sled section of this unit, students are taught how to measure to within $\frac{1}{4}$ ". Then they are introduced to the sled problem, including orthographic (multi-view) drawings. The Daily Plan (below) shows the progression through the unit.

Iditarod Sled Activity Daily Plan

Day	Teacher	Students	Materials
1	<ul style="list-style-type: none"> • lesson: measurement to 1/4" • intro problem, show sled 	<ul style="list-style-type: none"> • mark 1" x 4" card 	<ul style="list-style-type: none"> • index card cut to 1"x4" • overhead pens
2	<ul style="list-style-type: none"> • present overview: design sled, make sled, test sled • explain technology (humans as designers/problem solvers) • show problem-solving model and design sketches • hand out portfolio 	<ul style="list-style-type: none"> • fill in missing info in portfolio • start sketching 	<ul style="list-style-type: none"> • overheads • portfolio
3	<ul style="list-style-type: none"> • show orthographics • demo making of sled 	<ul style="list-style-type: none"> • give examples of orthographics (e.g., blue prints, house plans, mechanical drawings) • make plans 	<ul style="list-style-type: none"> • building plans, maps • portfolio • sled materials
4	<ul style="list-style-type: none"> • assist students in laying out sled 	<ul style="list-style-type: none"> • make sled 	<ul style="list-style-type: none"> • index cards • Popsicle sticks • glue, paper clips
5	<ul style="list-style-type: none"> • explain graphs 	<ul style="list-style-type: none"> • sketch sled on graph paper • do lab and record results • chart results 	<ul style="list-style-type: none"> • graph paper in portfolio • string, paper clips • film canisters • pennies • paper for charts

REFLECTIVE COMMENTS

This activity was done as part of a sabbatical project to design and implement activities that would address the MST standards. The emphasis was heavily on Standard 5 - Technology. While there is an elementary level standard for technology, there is no assessment for it at the elementary level. Therefore the elementary teachers' perspective would be looking for how technology could support the elementary curriculum. This activity was designed to support the existing Iditarod unit.

GUIDANCE FOR STUDENTS AND TEACHERS

The attached **Sled Procedure** and **Problem Solving** overheads are used to clarify the procedure for the students. Each student uses a portfolio for designing and testing their sled. A sample portfolio is attached.

At our school, sleds are constructed in the art room with the art teacher's help as part of the classes regular art class. Testing of the sleds is done back in the classroom. Pairs of students team up on one desk to test the sleds. One edge of both the wax paper and sand paper is taped to the desk. Once the sled is tested on one surface, the paper is flipped out of the way to expose the next sheet and then the desktop.

Iditarod Sled

Name

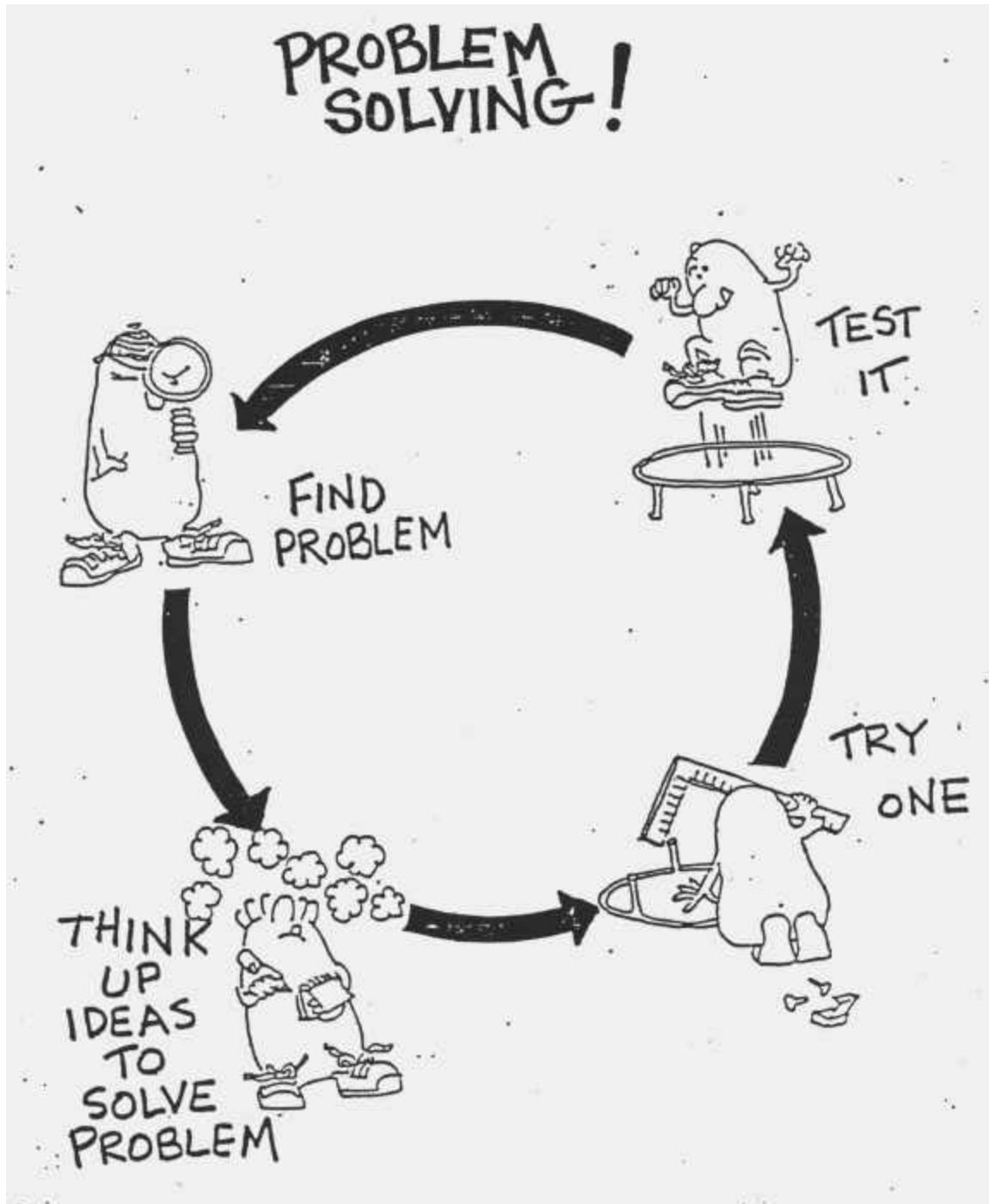
ACTIVITY	4	3	2	1
DESIGN SKETCHES	Student had many sketches that showed a variety of ideas	Student had one or two sketches of sled ideas before construction	Student had one or two sketches of sled after it was made	Student did not have any sketches
CLEAN-UP	Student helped clean-up more than his/her space	Student cleaned his/her own space	Student did some clean-up	Student did not clean-up
COOPERATION	Student helped partner learn or let partner help him/her learn	Student worked together with partner	Student worked somewhat with partner	Student did not work with partner
REASONING	Student's reasons were clear and followed concept accurately	Student's reasons were clear	Student had an erroneous reason for creation	Student had no reason for creation
NEATNESS	Student worked very carefully and neatly	Student worked with care	Student worked with some care	Student worked carelessly
ORIGINALITY	Student created different design with detail	Student created different design	Student created similar design	Student followed example
PRESENTATION	Student showed model, related it to the concept, and elaborated	Student showed model and related it to the concept	Student showed model but did not explain how it related to concept	Student did not explain model
VOICE	Student was very audible, clear, and understandable	Student was audible and understandable	Student was audible, but difficult to understand	Student was inaudible

COMMENTS:

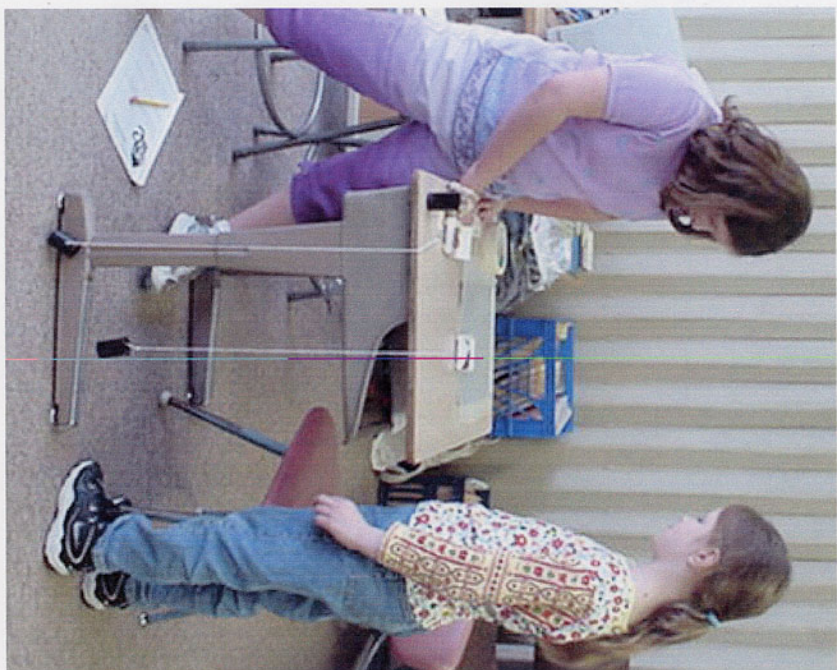
SLED PROCEDURE

1. Identify problem.
2. Sketch possible solutions.
3. Make working drawing/plan.
4. Transfer sled box plan to index card.
5. Cut card for sled box.
6. Fold card sled box.
7. Glue card sled box.
8. Glue on sled runners.
9. Install tow hook.
10. Test sled.

overhead master

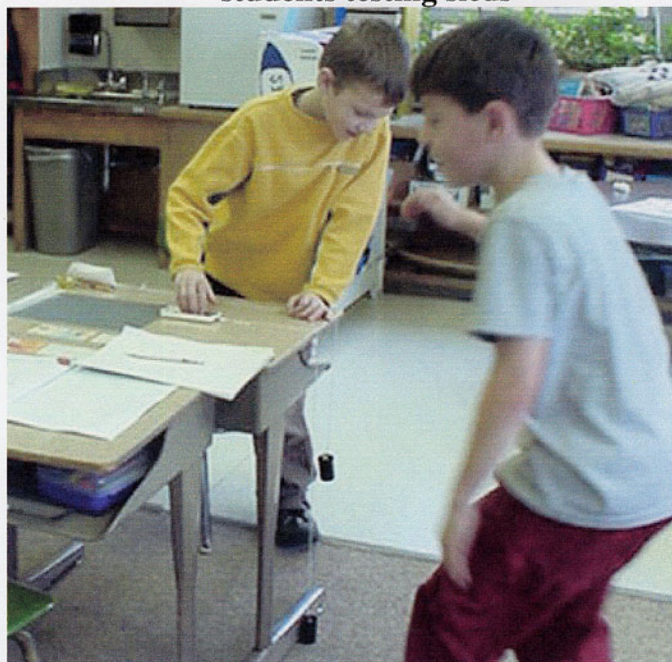


overhead master



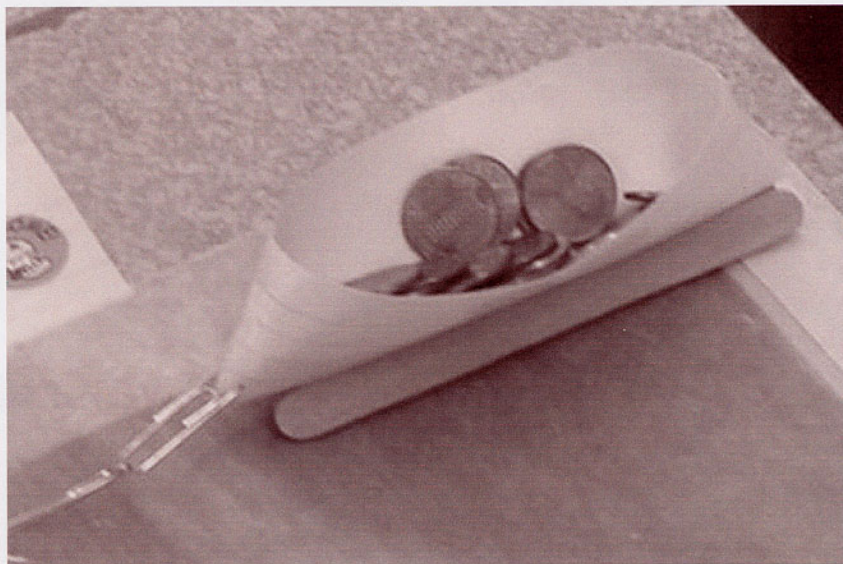


students testing sleds





different sled designs loaded with pennies



MONUMENTAL LEARNING

Wendy Handshaw Power, Patchogue-Medford UFSD

Grade Level Cluster: 2-4

LEARNING CONTEXT

Students will go through a process that models the one used by adults to design, secure funding for, and build some type of monument.

Objectives

Students will be able to:

1. research independently a person, event or object to honor/memorialize
2. compare and contrast local and national monuments
3. write a persuasive business letter to a wealthy philanthropist (Mr. Megabucks) to gain funding for their monument/memorial, including:
 - rationale for choice
 - detailed description of monument or memorial
 - choice and cost of building materials based on research
 - inscription, quote, poem, or explanatory information to be included at site
4. use a design portfolio to develop and create a scale model of their monument/memorial
5. build a scale model using materials found in room
 - fill out materials requisition form for all supplies needed
 - calculate cost of all materials using price list from “Mrs. Big Supplier and Sons”
 - e-mail supplier to find cost of items not listed
 - build project without going over \$100,000
6. use decision-making and problem-solving skills to find solutions to situations as they arise

Curricular Integration

This activity greatly enhances the fourth-grade social studies curriculum by allowing students to explore in depth a person or event of their choice. Teachers have the option of limiting choices to a particular time frame, enabling them to tie it more closely to a specific historical period or event. Additionally, the simulation aspect of the project leads to an understanding of economic factors, such as supply and demand, monopolies, production, and budgets. Prices fluctuate depending on supply and demand, factories need to increase production and pass on overtime and bonus costs to the builder. Not only do supplies have costs, but also there are often hidden costs due to “equipment” needs. Paint may cost \$1,500/coffee scoop, but there is a rental fee for a smock (\$100) and paintbrush (\$1,000), plus \$750 for newspaper to protect the work surface. OSHA fines are levied against unsafe work sites.

Math skills are practiced in a real-world environment as students attempt to build their models within the budgetary restrictions. Beyond basic calculation skills needed to extend unit costs per item to the correct quantity required (e.g., 20 Popsicle sticks @ \$200/stick = \$4,000), area and perimeter become a factor when a student requires a piece of felt 9" x 12" and finds it is

sold in 4" x 4" pieces. Additionally, as the simulation progresses, students are often required to figure out discounts on “overstocked” items.

Characteristics of various metals, stone, and other building materials are explored as students make choices for the construction of their monuments/memorials. Correspondence between students and scientists at national laboratories and local monument makers is not uncommon as questions arise.

It should be noted that this activity originally was developed as a way of students’ dealing with the Columbine High School shooting tragedy in 1999 and the sudden death of a popular elementary principal.

MST Standard (#)/Performance Indicators

- access needed information from printed media, electronic databases, and community resources (#2)
- describe objects that might be modeled or made differently and suggest ways the objects can be changed, fixed, or improved (#5)
- investigate prior solutions/ideas from books, family, community members (#5)
- generate ideas for possible solutions, evaluate and determine best solutions, and explain reasons for the choice (#5)
- plan and build a model of the solution using familiar materials, processes, and hand tools (#5)
- discuss how to test the solution, perform the test, record and portray results, etc. (#5)

RESOURCES NEEDED FOR TEACHER AND STUDENTS

- Design Portfolio
- Variety of “found”/recycled objects, such as containers, bottles, berry baskets, bottle caps
- Craft materials, such as Popsicle sticks, beads, felt, tissue paper, paint
- White glue (low-temp glue gun is also handy to have)
- Computer(s) with e-mail (to teacher) capability
- Internet access is helpful for research purposes
- Book of quotations is helpful
- Letter from Mr. Megabucks (samples attached)
- “Check” for \$100,000
- CD-ROM *The World’s Greatest Monuments: A Visual Encyclopedia* (InterACTUAL Technologies) – not necessary but a wonderful resource for this project

INSTRUCTIONAL AND ASSESSMENT PLAN

Estimate of Time

Allow three sessions for the project itself. Each session is approximately three hours. This project can be extended for a much greater period of time.

Learning Experiences

Background Information: Compare and contrast various local and national monuments and memorials by viewing on Internet, if possible (CD is helpful here). Once a large list is generated, begin to look at characteristics of each item. Is it for a person, an event, an object? From what is it made? Is it a building, a statue, a park, etc.? Exposing students to as many different types of monuments and memorials at this point helps them to focus on what would be the best way to represent their choice later on.

Independent Research: On three separate mornings prior to beginning this activity, I ask students to brainstorm who they think are the 10 most important people in history, 10 most important inventions, and 10 events that had the most impact on history, with a brief explanation of why they made their choices. These lists are composed as a warm-up exercise.

To begin making a choice for their monument/memorial, I have the students re-examine their lists and choose what they consider to be the most important item in each. Time is allotted in library and computer lab to continue research and discern additional facts that would merit honor. Time is also spent looking for an appropriate poem, quote, inscription, etc., that reflects the theme of their monument. A sketch of their proposed monument/memorial and its site is then created.

Persuasive Business Letter: Once students feel they have enough information to support their choice for such an honor/memorial, they write to Mr. Megabucks to convince him of the merit of a monument/memorial. The letter must be well written and receive at least 18 points on the rubric before receiving funding. This letter is crucial to the continuation of the activity, since no one can design or build a monument without funding. Students often need to do additional research to find out about various building materials, costs, and methods of construction as well as re-examine existing monuments for ideas. Letters are revised, edited and resubmitted.

Design Portfolio: Once students receive funding from Mr. Megabucks in the form of a \$100,000 “check,” they look through classroom bins of materials to see what is currently available. Using their original design, the students use these items to represent actual building materials. For instance, Popsicle sticks represent steel beams, Styrofoam is marble, etc. Students decide the scale for their model, materials to be used, and tools required and submit their portfolio to Mr. Megabucks for review. If he okays the design (he almost always does), students may go on to the building phase.

Construction: As students begin building their models, math and problem solving are the order of the day. Materials must be purchased, amounts computed, discounts figured, rental fees calculated, conformity to the scale maintained, and a myriad of other mathematical challenges overcome. Design challenges are numerous, from how to create a “head” from classroom supplies to supporting structures before the models are complete. Often contracts are negotiated between students to facilitate the process.

Assessment/Evaluation: There are several assessment tools built into this project. A Rubric for Business Letter (attached) is used to evaluate the request to Mr. Megabucks for funding. The design portfolio (D&T Tech-Folio) initially organizes ideas, concepts, materials, and scale for the monument. As the construction phase continues and additional information is added to the design portfolio, the students’ learning outcomes are readily apparent. Additionally, monitoring

the supply requisition form allows the teacher to check understanding of mathematical concepts. Finally, students complete an individual rubric for their project assessing their own learning.

REFLECTIVE COMMENTS

Value to Students

Because this project was initially derived directly from the students' fears and need to find a way to deal with their emotions, the first year I attempted this it was understandably extremely valuable to these students. It was interesting to see that my second group of students was just as involved in the project and embraced it as "a chance to experience the real world." The students use multiple modalities in an integrated environment and are hard-pressed to admit it is a simulation. Their problem-solving and decision-making skills are tested in a multitude of ways. The students form consortiums to purchase materials and save on rental costs. One class imposed an embargo on glitter as a result of OSHA fines. They think in terms of quality discounts and percentages, concepts that they were afraid of two weeks earlier. The opportunity to direct their own learning by their choice of subjects is invigorating to them, and, yes, we do have a monument to the ubiquitous Pokemon, but in the interests of fostering Japanese-American trade alliances.

The chance to discuss granite and marble with monument makers and a quarry owner creates an additional element of realism to the project. Some of the discussions with laboratory scientists were well over their head, but a few succinct questions soon remedied the situation. A few students have voiced interest in pursuing geology as a career, along with engineering and other construction-related occupations.

It should be noted that all e-mails to anyone other than "Mrs. Big Supplier" (me) are sent, received and carefully screened on MY school address.

Teacher Learning

I have learned never to underestimate the resourcefulness of my students. I find this to be the most mentally exhausting (and rewarding) unit I undertake. Trying to (1) stay a half step ahead when they are trying to get the most supplies out of their budget, (2) find alternative materials for what they need, and (3) keep up with the Mrs. Big Supplier and Sons e-mail is difficult. We had to add an "import tax" to accommodate materials that HAD to be brought from home. Keeping students moving while allowing them time to try alternate solutions is always a challenge but necessary. The parent response also has been overwhelming. At our first Open House to display the finished models and design portfolios, parents and grandparents were much more enthusiastic than I had expected. Just like the students, I have learned more about geography, geology, the Internet, and problem solving. Hands down, this is my favorite classroom learning activity.

GUIDANCE FOR STUDENTS AND TEACHERS

Attached are the following teacher-created forms and examples of student work and:

- D&T Tech-Folio
- Cost of Materials/Equipment Rental Fees

Monument.DOC

- Student grant request letter
- Sample “award” letter
- Design sketch
- Rubric for business letter



D&T Tech-Folio

Name: _____



Design and Technology Challenge: write a description of of the challenge your teacher has asked you and your team to solve.

Create your own monument or memorial.

Specification: write a list of all the things that your solution must do to meet the challenge. Remember .. list every small thing that you think it should do.

- 1 It should stand for my idea
- 2 It should be a scale model of
- 3 a monument of the 3 presidents
- 4 who served as presidents in
- 5 the Vietnam war.
- 6

Constraints: write a list of all the things that limit your solution (for example, size, weight, time, costs, etc.)

- 7 3 weeks time
- 8 Only Materials available are ones in class
- 9 Can't be bigger than a table
- 10 Can't weigh more than 10 pounds
- 11 Write a letter persuading Mr. Magabuck
- 12 to give you \$

MONUMENT MATERIALS/EQUIPMENT RENTAL

Cost of Materials		Equipment Rental Fees	
toothpicks	\$10	Scissors:	
Popsicle sticks	200	student	\$10,000 per day
1" dowel	100	teacher	20,000 per day
1" wood	500		
		Ruler	5,000 per day
solid foam 4" x 4"	50		
foam tray	500	Pencil (teacher's)	5,000 per day
		to sharpen	300 each
plastic container	1000		
film canister	500	Saw	1,000 per complete cut
plastic cup	750		
bottle cap/lid	300	Glue Gun	250 per drop
strawberry basket	700	up to	1,000 per line
paper cup	400	Crayons	100 per color
1" cardboard tube	250		
cardboard cup holder	2500	Paint **	1500 per Tbl
1" clear tape	100	**smock rental	100
Elmer's glue (mini)	5000	brush rental	1,000
1" string	50		
cardboard 4" x 4"	250	**smock rental	100
1" foil	1000	brush rental	1,000
paper 4" x 4" (plain)	200		
(construction)	400		
newspaper (sheet)	750		
		Painting also requires the purchase of newspaper to	
bead	200	protect work surface and avoid an OSHA fine.	

Prices for all other items are negotiated between monument builder and supplier. Costs will vary according to demand and availability. Prices on list may be changed as supplies dwindle ONLY with a one period advance notice. Unused supplies may be sold to other builders or a landfill fee will be charged for leftovers.

Messy work areas and unsafe work habits are subject to OSHA fines that increase for repeat offenders.

Since Popsicle sticks and dowels are analogous to steel beams, try to find the current cost of steel and other general building supplies either via the Internet or through local building contractors.

Save The Dolphins
Wave Avenue
Medford, NY 11763

Really Huge Corporation
1999 Goldbrick Road
Moneyland, PA 10004

Dear Mr. Megabucks:

My Company and I were thinking of what people are doing to dolphins and other ocean animals. They are polluting the ocean and hurting the animals that live there. If people keep polluting dolphins will become endangered. Then if people keep on polluting the dolphins will soon become extinct.

Dolphins are one of my favorite animals so I don't want them to be extinct or endangered. My company and I want to build a monument with a dolphin on it. We want the base to be baby blue. I want the dolphin to be silver. I want there to be a plaque on the base. The plaque will say "Save the Dolphins. Don't pollute the Water." The base should be marble and the dolphin should be silver. The words on the plaque should be gold and the background should be light green. Would you please lend me some money to build this monument?

Thank you for your time and your cooperation.

Sincerely,

Really Huge Corporation
1999 Goldbrick Road
Moneyland, PA 10000

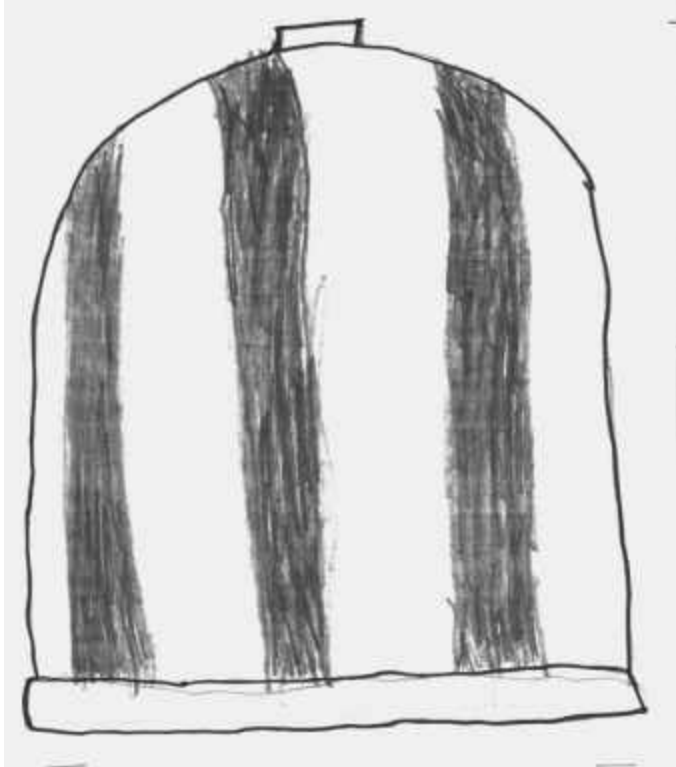
Dear

Congratulations! I am pleased to inform you that your company's design has been chosen to win the \$100,000 award to build the monument/memorial that you have proposed. We were very impressed by the ingenuity of your design, the originality of your structure, and the commitment that was contained in your letter. My company will be happy to send you a check for the above amount as soon as you provide us with a detailed materials list that includes the estimated costs.

We believe that the American people will embrace the emotions and ideals that are demonstrated in your memorial/monument. We are looking forward to forging a relationship with you that will result in a superior model.

Sincerely,

Carnegie Rockefeller Megabucks



Rubric for Business Letter

	4	3	2	1	0
Heading	Includes the following in proper format: 1) Return address 2) City, State Zip 3) Date 4) Skip line before RA	One element is missing or incorrect.	Two elements are missing or incorrect.	Three elements are missing or incorrect.	omitted
Inside Address, Salutation, Closing	Includes the following in proper format: 1) Name and Corporation 2) Address 3) Proper Salutation 4) Proper Closing	One element is missing or incorrect.	Two elements are missing or incorrect.	Three elements are missing or incorrect.	omitted
Mechanics	Looks proofread: 1) Correct spelling & capitalization. 2) Correct grammar. 3) Paragraphs indented 4) Correct Punctuation	Glaring and/or multiple errors in any category	Glaring and/or multiple errors in two categories	Glaring and/or multiple errors in three categories	Glaring and/or multiple errors in all categories
Ideas	Includes: 1) Makes sense 2) Gets & holds attention 3) Supports choices with meaningful details 4) Personal connection to choice.	One element is missing or incorrect.	Two elements are missing or incorrect.	Three elements are missing or incorrect.	omitted
Organization	Includes: 1) Description of monument 2) Rationale for choice 3) Choice & cost of building materials 4) Quote/inscription/poem	One element is missing or incorrect	Two elements are missing or incorrect.	Three elements are missing or incorrect	omitted