

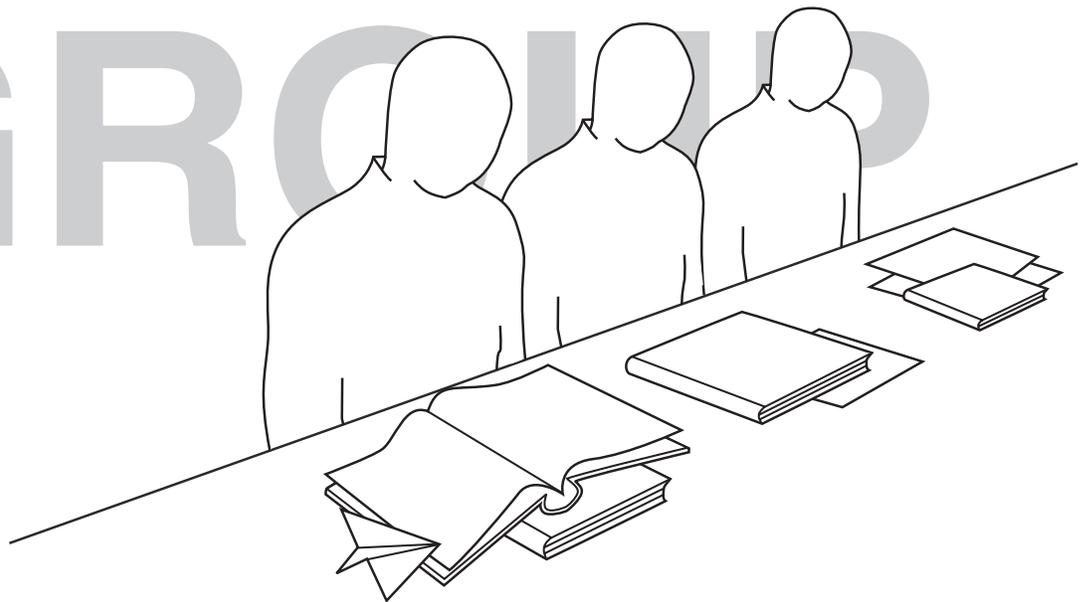
learning lab

BLUE MAN GROUP

BLUE

MAN

GROUP



The Dance of the Group Member and the Trickster

The Picture of Groups

GRADES 3–5

THE BLUE MAN CONNECTION

The Blue Man is both the seamless collaborator and the edgy innovator. Pushing boundaries between leading and following, responding and listening, and giving and receiving, the Blue Man knows the successful road is traveled alongside others in careful symbiosis. The Blue Man understands that the sum of a group is more than its parts. This lesson will take a close look at how groups are established, the role of the individual within a group, and how relationships develop within groups.

LESSON SUMMARY

Gather a wide variety of magazines—like Sports Illustrated, National Geographic, Time, Road and Track, Self, the Sears Catalog, Teen, and Vogue. Facilitate a wide array of visually rich and diverse choices. Try to have 5 magazines per group of 3 to 5 students. You will also need to gather enough 8 ½ x 14 paper for each group to create 3 collages.

Begin the lesson by brainstorming with students about the groups to which they belong. Take 10 minutes to push their thinking beyond family, teams, church, physical description (height, hair color, and eye color, for example), and clubs. Encourage them to think about things like neighborhood, state, nationality, gender, age, race, and language.

Once ideas have been collected, let students know they will be constructing group collages from the magazines. Divide the class into groups of 3-5 students. Give each group 5 magazines. Ask students to take 3 sheets of 8 ½ x 14 paper and 5 magazines. Ask groups to create 1 collage per sheet that covers the entire sheet, contains 10-15 images of people, and represents a group that they define. Perhaps show them examples of collages that are groupings of things like babies, basketball players, politicians, or redheads, for example. Each collage must be titled. This exercise should take 25 minutes. Remind students of the importance of supportive group involvement as tales are created and shared.

Once students have finished three collages, ask them to gather as a class. Take 15 minutes processing the exercise. Allow each group to present their collages and share the titles. Ask students how they decided on group membership. What are some criteria for membership in certain groups? Was there debate about what/who should be included/excluded? Did everyone agree on the rules for group membership? Allow broader questions to emerge, such as “What does it mean to be a group member?” and “How can you be an individual and be a group member?”

Allow students to take the last 10 minutes of the exercise to reflect, in writing, on the advantages and disadvantages to group membership. Give students the opportunity to share their answers if they choose.

CONNECTING TO NATIONAL STANDARDS

Language Arts- NL-ENG.K-12.4, Communication Strategies

Social Studies- V. Individuals, Groups, and Institutions

Visual Arts- NA-VA.K-4.1, Understanding and applying media, techniques, and processes



A Trickster Tale

GRADES 6–8

THE BLUE MAN CONNECTION

The Blue Man is both the group member seeking to work with others to play, investigate, and explore, and the trickster looking for ways to individually imbue a group process with creativity, spark, and mischief. The lesson will provide students the opportunity to become acquainted with the trickster character from traditional folklore, apply that understanding by drafting a folktale, and explore the way in which the role of trickster may be a part of their everyday life.

LESSON SUMMARY

Introduce this lesson by sharing several trickster tales with the class. Trickster tales are easily accessed, generally very brief, and have overarching themes that are consistent across cultures. Take 10 minutes to read example tales. Then take 10 minutes to discuss several questions: 1. What are the consistent qualities of the trickster character across the tales? 2. What action happens or what problems are solved within the stories? 3. How are the challenges of each story confronted and resolved? This is a condensed discussion that could take much more time. The main points should be that students are exposed to cultural background and structure of trickster tales. In addition, students should become familiar with the trickster character.

Once students have constructed a basic framework of trickster stories and qualities of the trickster character, divide students into groups of 3-5 and ask them to take 20 minutes and draft a trickster tale of their own. All tales should be constructed with the following elements: 1. They should be 250-500 words in length; 2. They should have a clearly discernible trickster character (The trickster may or may not follow a specific tradition. It does not have to be a coyote, or raven, or rabbit, for example); 3. A problem or conflict has to occur and be resolved in the story.

Students then share the drafts of their trickster tales. Sharing should take about 15 minutes depending upon the number of groups. Being constructive contributors, respectful listeners, and sensitive audience members during the creative process is central to this project being successfully created and shared.

The exercise should end with a discussion that analyzes the following questions: 1. In what ways were the trickster characters similar and/or different across all the tales? 2. What problems were solved in each tale and how? 3. Where do tricksters appear in everyday life? 4. How do tricksters function within groups? 5. Do tricksters generally solve or cause problems in groups?

CONNECTING TO NATIONAL STANDARDS

Language Arts- NL-ENG.K-12.4, Communication Strategies

Social Studies- I. Culture, V. Individuals, Groups, and Institutions

The Tribe

GRADES 9–12

THE BLUE MAN CONNECTION

A tribe is composed of group members and tricksters, of close family and distant cousins, of rules—some clearly stated and others simply understood. The Blue Man operates like a tribe. As a group, the Blue Man moves through space and makes music. He has a common journey of questions and discovery. Cohesion and community guides his coming and going. As an individual trickster, he tests boundaries, plays jokes, devises plots, sometimes fails, and sometimes leads. The trickster pushes and inspires, challenges and bothers. This lesson seeks to use the concept of a tribe to explore the tension between group membership and the individual trickster.

LESSON SUMMARY

Start the lesson by asking students to think about what they know about tribes. Ask students to name some common examples of tribes. Push the students' thinking beyond the general understanding of a tribe (groups of Native Americans or Africans, or in the context of the television show *Survivor*) to consider families, sports fans, and the military, for example. What are common elements of tribes? Are tribes different from groups in general? What are specific roles fulfilled by people in tribes? What are common rules of tribes? Allow this discussion to take 10 minutes.

Once students have thought broadly about the concept of a tribe, randomly establish groups of 3-5. The random nature of the group division in this exercise is important because students need to work with people with whom they might not already have an established relationship. Tell students they will be forming tribes with the people in their group. Each tribe will be responsible for creating a name, 3 criteria for membership (What/who do you have to be to be a part of the tribe?), and 3 basic rules of conduct for the tribe (What do you have to do to stay in the tribe?). This part of the exercise should take about 15 minutes.

Take about 10 minutes to share tribal information with the class.

Now that tribes have been formed, introduce the idea that each tribe believes they have a right to control the classroom. One tribe says their ancestors built the original classroom so they have a right to control it. Another tribe says they won the classroom in a war. Another tribe says they were given the classroom as part of a treaty negotiated by tribes in the past. Another tribe says they gained control of the classroom through marriage. The number of reasons will depend upon the number of groups. Each group will need to adopt a reason why they feel they have control. At this point ask groups to take about 15 minutes and begin the process of deciding how control of the classroom will be decided. Act as a UN negotiator who has been brought in to mediate the situation. Do they choose a chief to negotiate on behalf of the tribe? What role do the rules and identities of individual tribes play within this situation? How are previous agreements and understandings going to be treated within the current situation? Not all of these issues will be solved in the given time, but allow students to explore how they would approach this situation.

The final 10 minutes should be spent discussing the following questions: 1. How was tribal identity established? 2. Were criteria and rules easily established? 3. Did individual roles emerge within the tribe? 4. Did any tricksters who perhaps questioned or pushed the group emerge? 5. Did those roles carry over into the establishment of classroom control? 6. What was the relationship between tribal identity and the desire for classroom control? 7. Did individuals emerge within the tribes during the process of negotiation? 8. What roles did they play? Leader? Peacemaker? Agitator? Solution finder?

CONNECTING TO NATIONAL STANDARDS

Language Arts- NL-ENG.K-12.4, Communication Strategies

Social Studies- I. Culture, V. Individuals, Groups, and Institutions

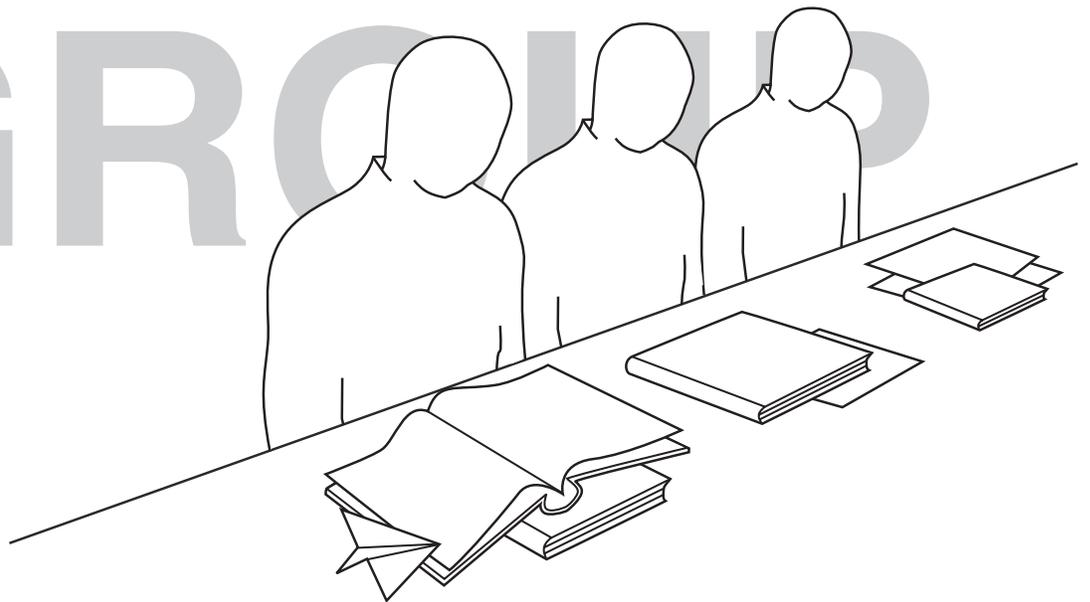
learning lab

BLUE MAN GROUP

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Melodious Mathematical Inventions

Inventing an Instrument

GRADES 3–5

THE BLUE MAN CONNECTION

Instruments made from unusual objects are seen and heard throughout the Blue Man performance. PVC pipe becomes a drum and cereal becomes a noisemaker. Instruments, and specifically instruments created by the Blue Man, become a springboard for creativity, interaction, and humor. This lesson will introduce the idea that at one point all instruments are the product of imagination and engineering. It will allow students to think about how they might create an instrument themselves. It will also develop the skill of self-directed learning as they conceptualize and sketch their instruments.

LESSON SUMMARY

Begin the lesson by presenting students with 10-15 random objects. Make sure the objects represent a combination of elements, origins, sizes, and shapes. They need not, and probably should not, have an obvious musical purpose. Explain that the students will be inventing instruments. Offer a definition of invented instruments that involves adapting, combining, and/or engineering a combination of materials for a musical purpose. Arrange random objects on a table in the front of the classroom. Ask students to take 10 minutes to look at the objects and choose 5 that could be combined to be an instrument. Students decide which objects they would like to use, write down the names of those objects, and then leave objects on table. Let students know they will be able to look at their objects again, if they need to, after everyone has had a chance to look at the table. Remind students to be mindful of one another while they are looking at the table—take turns, be courteous of others who need to see the table, be good listeners, and keep hands to yourself as you move around.

Once students have chosen their objects, ask them to sketch what this instrument might look like. Creativity, not necessarily functionality, is the main thing to explore at this point. Allow each student's individual creativity to direct the creation of the instrument. Encourage students to capture the detail of the selected items as they sketch. Make sure all 5 items are represented in the sketch, and that they are all connected in some way. Allow 20 minutes for the sketches to be completed.

Next, ask students to take 15 minutes to write a brief description of what their invented instrument might sound like. Where would the instrument possibly sit in an orchestra or a band, or would it have another use? What type of music would the instrument play? If the instrument sounded like an animal, what animal would it be? If the instrument sounded like an environmental sound (train whistle, fire engine siren, or church bell, for example), what would it be?

Conclude the lesson with students sharing their sketches and brief instrument sound descriptions. This final part of the lesson should take 15 minutes.

CONNECTING TO NATIONAL STANDARDS

Fine Arts-Music, NA-M.K-4.6- Listening to, Analyzing, and Describing Music; Visual Arts, NA-VA.K-4.1 Understanding and applying media, techniques, and processes

Language Arts- NL-ENG.K-12.5- Communication Strategies

Science- NS- K-4.2- Science and Technology



Measuring Music

GRADES 6–8

THE BLUE MAN CONNECTION

The Blue Man uses instruments of various sizes to create music. PVC pipe bellows. Drums pop and sizzle. The music in a Blue Man show pushes the boundaries of standard musical principals and conventions. Musical rules hold true even in the presence of edge and innovation. This lesson gives students the opportunity collect, organize, and graph data in an effort to explore the mathematical relationship between instrument length and pitch.

LESSON SUMMARY

Set up 3-5 groups with 3-5 instruments in each. Include a variety of instruments, such as strings and brass within each group—strings with strings, brass with brass. Grouping will make measurement a bit easier. Assign a fixed-pitch instrument, such as a keyboard, bells, or a piano to half of the instrument groups. Use fix-pitch instruments to determine instrument pitches. (In order to have enough instruments, borrow instruments from your school’s orchestra and/or band, or your students’ own instruments.) Divide students into groups of 5-7 students. Assign each group a secretary to record data that will be collected by other group members. Instruct half of the groups to measure instruments and the other half of the groups to verify pitch. All students will both measure and verify pitch. They will just alternate tasks. Also remind them of the need to respect all ideas and space, and to listen to one another.

With respect to measurement, ask students to measure the sounding length of instruments: For example, on string instruments the measurement should be taken from the top of the fingerboard to the bridge. On brass instruments, the students will have to measure the complete length of all the tubing used to produce sound. To reiterate, ask half of the groups to measure first, and ask the other half of groups to verify the pitch of the instruments with fixed pitch instruments. Then switch roles so that each group both verifies pitch and measures all instruments.

When accurate length and pitch data have been collected by all groups, ask each group graph their data on a coordinate graph. Group secretaries should graph the data from each instrument on a coordinate graph to be shared with the larger group. Instruct the secretaries to graph data in order of instrument length, with length graphed on the y-axis and the pitch on the x-axis. Ask the other group members to help the secretaries make accurate graphs.

Conclude the lesson with group secretaries sharing the findings from the investigation with the entire class.

CONNECTING TO NATIONAL STANDARDS

Fine Arts- Music, NA.9-12.6 Listening to, analyzing, and describing music

Math- NS 6-8 Measurement, Data analysis and probability

Excerpted from In Harmony with Education Program: Bose’s Teacher Guide

Composing Invention

GRADES 9–12

THE BLUE MAN CONNECTION

The Blue Man uses invented instruments to become a rock star, actor, comedian, engineer, and scientist. Invented instruments are vehicles for creativity, exploration, and discovery. Imagination defines music in the Blue Man world. New sounds sing from drums and pipes when they're pushed by the novel air of innovation. Within this vision, the person behind the pen on the sketchpad that draws the picture of a new instrument, or cuts wire that will tie pieces of recycled aluminum together, or builds a triangle out of steel, marbles, and dental floss pushes the boundaries of the musically possible. The instrument is just the beginning. The journey to making music then becomes filled with learning technique and composing music—art is an evolution. This lesson seeks to guide the creative impulse through to performance, while also reinforcing the role of community and collaboration in the creative process.

LESSON SUMMARY

This lesson is the final lesson in a unit in which individual students conceptualize, design, gather materials, and invent an instrument. These are the requirements for the invented instrument unit: 1. Instrument must be made from materials that can make music, 2. Students write a 1-3 minute original composition for their instrument, 3. The piece must follow standard rules of composition including accurate and descriptive musical notation. (Students have already had performances of their composition taped and critiqued by the teacher.) In this lesson, they will share their compositions for the first time in small groups—this initial performance will be a step toward a final public performance. Compositions need to be legibly written and photocopied to share with group members. Divide students into groups of 3-5. Students watching the performance should follow along on the sheets of music provided by their classmates. To guide this process, feedback can be organized into a rubric that addresses basic musical concepts and performance criteria.

CONNECTING TO NATIONAL STANDARDS

Fine Arts- Music, NA-9-12.2- Performing on instruments, alone and with others, a varied repertoire of music; NA.9-12.4- Composing and arranging music within specified guidelines

Science- NS- 9-12.5- Science and Technology

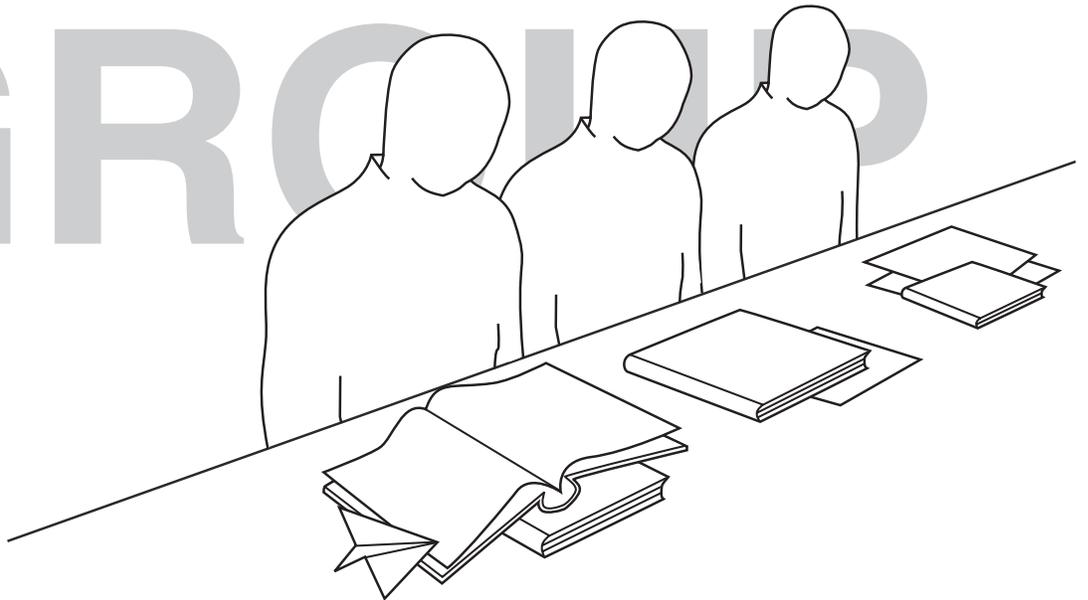
learning lab

BLUE MAN GROUP

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The Science of Goo

Mysterious Substances

GRADES 3–5

THE BLUE MAN CONNECTION

The heart of a scientist beats within the Blue Man. Whether by experimenting with PVC pipe and sound, or by taking us through the inner workings of eyes and brains, the Blue Man is front and center curiously investigating life and its mysteries. This lesson will present students with unknown substances that they will be asked to analyze in an effort to build skills of scientific inquiry and problem solving, thereby cultivating the potential scientists that may be waiting within their minds and on the tips of their fingers.

LESSON SUMMARY

Before students enter the room, prepare 15 bowls of easily obtained, common, and cheap substances. These substances could be jelly, marshmallows, rice, seeds, Jell-O, potting soil, gravel, feathers, marbles, cotton, mayonnaise, cookie dough, Vaseline, leaves, and tinsel, for example. A variety of substances should be included to provide students a wide-ranging tactile experience. Arrange bowls in sets of three.

Begin the lesson by choosing one bowl and modeling how you might find out the given properties of the substance in the bowl. Possibly ask questions like, What color is it? Is it hard or soft, heavy or light, prickly or smooth, wet or dry, sticky or slippery? Does it crunch or crinkle when you move it around? Does it slip through your fingers? Does it smell? Brainstorm other possible questions with students. Draw students' attention to the fact that scientific experimentation often starts with observing things and asking basic questions. If applicable to age and local curricular needs, remind students of a science basic: Substances have physical and chemical properties that can be used to categorize and understand the substance. Physical properties, the properties on which this lesson focuses, include color, smell, opacity, viscosity, and density.

Once the lesson has been introduced, break students into groups of 3 or 4 and assign each group to a table of grouped bowls. (Bowls should be grouped in interesting and not necessarily logical or typical combinations. More interesting combinations of substances will require students to stretch a bit to make connections.) After students have been successfully grouped, and found their bowl grouping, tell students that each group will need to do the following: 1. Touch the substance in each bowl, 2. Use the questions that were brainstormed, and possibly others they have thought of since the introduction, to investigate the substances, and 3. Describe each substance on paper. (Write three descriptive sentences/statements about each substance. One paper per group.) If the substance is easily identified, encourage students to think beyond the obvious name/classification, looking closely and carefully at the particular properties of the substance that they may not have previously noticed in earlier experiences with the substance.

Allow students 15-20 minutes to explore the substances at their tables, writing descriptive sentences for each substance. Remind students to be mindful of one another while they are looking at the substances—take turns, be courteous of others at the table, and be good listeners. Following their investigations, each group will share their descriptions with the larger group. Allow 15 minutes for the group to share their descriptive sentences.

After group discussion, students take 10 minutes to individually respond to the following questions on small sheet of paper: 1. Describe the process of investigating each substance. (How did you think of ways to describe each substance? Did you think of ways the separate substances were alike or different from one another? Was it easier by the time you investigated the third substance?) 2. What did you notice about working in groups? (Was it easy to talk about each substance as you went along? Was it helpful to have other scientists involved? Did you learn anything through talking with fellow scientists as you worked?) 3. How can this process be used in your day-to-day life? (When can you use the skill of observation? Where have you seen a similar process—observing things carefully and thoroughly—being used? Who are particularly good observers, and why?) Give students the opportunity to share their answers to their individual questions during the last few minutes of the lesson.

CONNECTING TO NATIONAL STANDARDS

Science- NS.K-4.1 Science as inquiry, NS.K-4.2 Physical science—Properties of objects and materials

English/Language Arts- NL-ENG.K-12.5 Communication strategies, NL-ENG.K-12.7 Evaluating data



Making Goo

GRADES 6–8

THE BLUE MAN CONNECTION

The Blue Man is not afraid to get messy in the pursuit of knowledge and fun. Paint soars. Twinkies smooth. Marshmallows fly. A Blue Man's drive to concoct, disturb, agitate, and invent provides fuel to the creative fire. This lesson seeks to allow students to step into scientists' shoes. Students will create goo and investigate its properties in great depth as they learn to see with clear eyes, ask thoughtful questions, and describe what they see in careful detail.

LESSON SUMMARY

You may want to model making goo in a previous class. You will need the following materials: 1. 1 ½ cup of corn starch per group, 2. Medium Ziploc bag for each group, 3. Plastic container for each group, 4. Measuring cup for each group, 5. ¾ cup of water for each group; and 6. Food coloring for each group. Have materials placed on tables/desks in a way that facilitates an easy transition to the activity.

Time will be tight, so allow only 10 minutes for groups to form and goo making to commence. Divide students into groups of 3-4. Ask students to mix 1 ½ cup corn starch with ¾ cup of water. This process should take 15 minutes or less. Each group should have enough goo for each student to take a small portion to work with and explore. Once the groups have made their piles of goo, encourage students to investigate the substance. (Students may want to mix food coloring into the goo at this point and observe what happens as the food coloring disperses throughout the goo.)

Ask groups to take 15 minutes to record observations of the goo on group experiment logs. What texture does it have? What shape does it have? What color is it? Does it stretch? Does it bounce? Does it float? Encourage students to ask questions and make as many observations as time will allow. Also remind them of the need to respect all ideas and space, and to listen to one another.

Take 15 minutes and ask groups to share their observation logs with the class. What were consistent properties of the goo? Did any groups find unusual properties? Were there any differences? Why might those differences have existed? What was it like to work in a team during this process? In what ways did collaboration help or hinder the scientific process?

Allow 10 minutes for cleanup.

CONNECTING TO NATIONAL STANDARDS

Science, NS.5-8.1 Science as inquiry, NS.5-8.2 Physical science

English/Language Arts, NL-ENG.K-12.5 Communication strategies, NL-ENG.K-12.7 Evaluating data

The Failure of Goo

GRADES 9–12

THE BLUE MAN CONNECTION

The Blue Man scientist enters an investigation of gooey things with a thirst for knowledge and a curiosity that blurs the line between work and play. His questions are big. His mind is sharp. If necessity is the mother of invention, then the Blue Man scientist focuses his attention on what the world needs and uses science to solve the problem. Silly Putty, Teflon, and Post-it Notes are examples of gooey products that aspired to meet specific needs and were developed from experiments gone awry. These substances were created and eventually put to uses for which they were not originally imagined. Out of experimental failure came innovation and success—victory was snatched from the jaws of defeat. This lesson seeks to give students the opportunity to step into the shoes of the pioneers of goo—as scientists on the cutting edge of goo development—and learn from perceived experimental failure.

LESSON SUMMARY

Introduce the lesson by sharing the story of the famous gooey substances Silly Putty (discovered in pursuit of a creating an alternative to rubber), Post-It Notes (discovered in pursuit of stronger adhesive), and Teflon (discovered in pursuit of stronger metal). Explain that their stories represent scientific experimentation at its best—innovation through supposed failure. Take 10 minutes to introduce these examples and brainstorm other possible examples they might know of where failure was not really failure in science.

Break the class into groups of 3-5 students. Tell them they are scientists working for very important scientific laboratories. Each group has been asked to create a goo-related substance. They will be asked to present a report to the board of directors of their lab in which they explain 5 principal facts: 1. What is the name of the substance they sought to create? 2. What is the intended purpose of the substance? 3. What were the observations they collected during the experiment? (What were the basic properties of their substance? Did their substance possess the necessary strength, keep a shape, bounce high enough, or stretch far enough?) 4. Why don't the properties of the newly created substance meet the original experimental objective? 5. What is the purpose and use of the new substance? (Provide 3 ways in which it meets a newly defined need.) Students should be given 20 minutes to draft their report.

Students should then be given 5 minutes per group to present their reports to the board (the classmates and teacher). If students have access to the technology, reports could be created and presented in PowerPoint. Though that is not a necessity. This portion of the exercise should take 20 minutes, depending on the number of groups. Students should be reminded that being respectful listeners, and sensitive audience members is central to this project being successfully shared.

End the lesson with a discussion of several key ideas: 1. There is value in both success and failure within the scientific process; 2. Innovation results from experimental failure as well as success; 3. Scientists find value in positive and negative experimental data and results.

CONNECTING TO NATIONAL STANDARDS

Science- NS.9-12.1 Science as inquiry, NS.9-12.2 Physical science, NS.9-12.7 History and nature of science

English/Language Arts- NL.ENG.K-12.4 Communication strategies, NL.ENG.K-12.6 Applying knowledge