



Session Title: Play Doh Science Activity

Grade Level: 3rd- 6th grade

Focus: Science

Objectives: As a result of this lesson, the student will:

- Watch “What’s So Cool About Manufacturing” videos that demonstrate science and manufacturing.
- Make and record predictions, test, and journal discoveries and lingering questions.
- Test out the consistencies of the materials (salt, flour, water).
- Discover what happens when multiple ingredients are combined together.
- Follow instructions to create a finished product.

PA Standards	
Career Education and Work	<ul style="list-style-type: none"> • 13.1.3. A Recognize that individuals have unique interests. • 13.1.3. B Identify current personal interests. • 13.1.3. C Recognize that the roles of individuals at home, in the workplace and in the community are constantly changing. • 13.1.3. D Identify the range of jobs available in the community. • 13.1.3. E. Describe the work done by school personnel and other individuals in the community. • 13.1.3. F. Explore how people prepare for careers. • 13.1.3. G. Explain why education and training plans are important to careers. • 13.1.3. H. Explain how workers in their careers use what is learned in the classroom. • 13.1.3. E. Discuss the importance of the essential workplace skills, such as, but not limited to: Dependability, Health/safety, Team building, Technology. • 13.3.3. A. Identify attitudes and work habits that contribute to success at home and school. • 13.3.3. C. Explain effective group interaction terms, such as, but not limited to: Compliment, Cooperate, Encourage, Participate.
Science	<ul style="list-style-type: none"> • 3.2.3.A1. Differentiate between properties of objects such as size, shape, weight and properties of materials that make up the objects such as color, texture, and hardness. • 3.2.3.A2. Recognize that all objects and materials in the world are made of matter. • 3.2.3.A4. Use basic reactions to demonstrate observable changes in properties of matter (e.g., burning, cooking). • 3.2.3.A5. CONSTANCY AND CHANGE Recognize that everything is made of matter. • 3.4.3.C1. Recognize design is a creative process and everyone can design solutions to problems. • 3.4.3.D3. Collect information about everyday products and systems by asking questions. • 3.1.3.A9 3.1.3.B6 3.1.3.C4 3.2.3.A6 3.2.3.B7 3.3.3.A7 3.3.3.B3 <ul style="list-style-type: none"> ○ Understand that all scientific investigations involve asking and answering questions and comparing the answer with what is already known. ○ Plan and conduct a simple investigation and understand that different questions require different kinds of investigations. ○ Use simple equipment (tools and other technologies) to gather data and understand that this allows scientists to collect more information than relying only on their senses to gather information. ○ Use data/evidence to construct explanations and understand that scientists develop explanations based on their evidence and compare them with their current scientific knowledge.
Artifact Opportunity	<ul style="list-style-type: none"> • The Journal Worksheet can be used as an artifact.



Videos	<ul style="list-style-type: none">• Peters Township All-Clad Metalcrafters: https://www.youtube.com/watch?time_continue=70&v=7U-1RWJdbLU• Freeport Uncle Charlie's Sausages: https://www.whatssocool.org/previous-contests/pittsburgh-central-2018/• Kiski Area TruFood Manufacturing https://www.whatssocool.org/previous-contests/pittsburgh-2016/• Quaker Valley Sarris Candies: https://www.whatssocool.org/previous-contests/pittsburgh-2016/• Avonworth ARDEX Engineered Cements: https://www.youtube.com/watch?time_continue=71&v=V6By2oi0_-8
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Lesson Plan

Materials Needed

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| <input type="checkbox"/> 1 cup flour | <input type="checkbox"/> Plastic gloves |
| <input type="checkbox"/> ¼ cup salt | <input type="checkbox"/> Journal Worksheet |
| <input type="checkbox"/> ½ cup water | <input type="checkbox"/> Internet access |
| <input type="checkbox"/> 3 to 5 drops of food coloring | <input type="checkbox"/> "What's So Cool About Manufacturing?" videos |
| <input type="checkbox"/> Large mixing bowls | |
| <input type="checkbox"/> Measuring cups | |

Prior Knowledge

Overview: See what's so cool about manufacturing first hand! We will discover what happens when we combine a variety of ingredients together to make our own play doh! When we combine a mixture of ingredients we can make something completely new. Much like in manufacturing, we have to follow a specific list of steps in order to create our finished product. Many food products, toys, and materials are made through the process of manufacturing.

Procedures and Activities

Guiding Questions:

- What is manufacturing?
- How is science used in manufacturing?
- What do we predict will happen when we combine these ingredients together?
 - Will all of these ingredients mix well together?
 - How much of each ingredient will we need?
 - What do we predict the texture of the finished product to be?
- What other products use manufacturing?

Directions:

Step 1: Mix together salt and flour

Step 2: Mix together ½ cup warm water with a few drops of food coloring

Step 3: Slowly pour water into flour mixture, stirring as you pour

Step 4: Stir mixture until it is thoroughly combined

Step 5: Knead with your hands until the flour is completely absorbed

Step 6: Add more flour to reduce stickiness (if needed)

Step 7: Culminating Activity:

Students will:

- Journal their discoveries
- Revisit the guiding questions



- o Journal any remaining questions they have about the activity and manufacturing



Journal Worksheet

Your prediction	
Your results	
Journal any remaining questions about the activity and manufacturing	



Photo of final product:

