



Glow in the Dark Slime

Boys and Girls Club After School Science
NSF Center for Chemical Innovation
Chemistry at the Space Time Limit (CaSTL)
<https://www.castl.uci.edu/>

Standard(s) Addressed:

Students know that when two or more substances are combined, a new substance may be formed with properties that are different from those of the original materials.

Lesson Objective:

Children will be able to combine the ingredients for the slime and will see that the new substance has different properties than the liquid starch or glue.

Materials Used:

For each person:

Liquid starch, ½ cup

White classroom glue (Elmer's), 4 oz

Water, ¼ cup

Glow in the dark fabric paint, 1 – 2 oz

Plastic gloves, vinyl

Bowl

Measuring cups

Stirrer

Plastic bag for storage

Classroom Management:

Setting up: Before the lesson, assemble the materials. Children will want to make their own slime so plan to have enough materials for each child.

During Explore: While the children are observing the effects of mixing the materials, teacher will walk around, observe, ask questions, and supervise.

Clean Up: After Explore, collect the used materials and bowls.

Signal: Stand silently in front of the room, raising hand in the air to get the children's attention.

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ENGAGE: *Connect to Prior Knowledge and Experience, Create Emotionally Safe Learning Environment, Preview New Vocabulary* Estimated time: 5 – 10 minutes

Description of Engage: Teacher will engage the children in a discussion regarding mixing ingredients while cooking.

Teacher’s Role	Teacher Questions	Children’s Role
<p>Teacher gets the children interested in the lesson by asking if they have ever baked a cake or made cookies.</p> <p>Teacher scripts their words.</p>	<p>Have you ever helped in the kitchen to bake a cake or make cookies?</p> <p>Tell us what you did.</p> <p>Scientists follow recipes too when they want to make something but instead of flour and eggs and milk, they use chemicals.</p> <p>Today we are going to investigate what happens when you mix some chemicals together.</p>	<p><i>“We took flour, milk, eggs, a bunch of stuff and stirred it. Then we put everything into a pan and into the oven.”</i></p>

EXPLORE: *Hands-On Learning, Contextualize Language, Use of Scaffolding (Graphic Organizers, Thinking Maps, Cooperative Learning), Use of Multiple Intelligences, Check for Understanding* Estimated time: 10 – 15 minutes

Description of Explore: Each child will mix the ingredients for the glow in the dark slime. Each child will wear plastic vinyl gloves for protection.

Teacher’s Role	Teacher Questions	Children’s Role
<p>Teacher will have a pictorial procedure for the children to follow and will also give each child a piece of paper with the directions.</p> <p>Directions:</p> <p>Get a bowl.</p> <p>Measure 4 oz glue (whole bottle).</p>	<p>Here is the recipe for you to follow.</p> <p>Be sure to carefully measure the chemicals.</p> <p>What do you think you are making?</p>	<p>Each child works independently.</p> <p>They ask questions if they are unclear or unsure.</p> <p>Children are responsible for their own safety and the safety of others.</p> <p><i>“Slime!”</i></p>

<p>Add to bowl.</p> <p>Measure ¼ cup water.</p> <p>Add to glue in bowl.</p> <p>Stir.</p> <p>Add 1/2 cup of liquid starch.</p> <p>Add whole bottle glow in the dark fabric paint (1.25 fl oz).</p> <p>Mix with hands until the mixture does not stick to your fingers.</p>	<p>Is it the same or different from the glue you used? Use evidence to support your answer.</p> <p>How about the water or the liquid starch? Does what you made have the same properties as each of those ingredients?</p>	<p><i>“Different. It is stickier.”</i></p> <p><i>“No, it looks different and feels different.”</i></p>
<p>EXPLAIN: <i>Listening, Speaking, Reading, and Writing to Communicate Conceptual Understanding</i> Estimated time: 20 minutes</p>		
<p>Description of Explain: Children will present their findings to the class one group at a time. The teacher will encourage discussion by asking questions about their observations of the slime.</p>		
<p>Teacher’s Role</p>	<p>Teacher Questions</p>	<p>Children’s Role</p>
<p>Teacher asks the children probing and clarifying questions.</p>	<p>What do you think happens when you mix all the chemicals together?</p> <p>How is this like making a cake?</p>	<p><i>“They combine together to make something different.”</i></p> <p><i>“The cake is different from the flour and eggs and milk.”</i></p>
<p>EVALUATE: <i>Thinking Maps, Summarize Lesson and Review Vocabulary, Variety of Assessment Tools, Games to Show Understanding</i> Estimated time: throughout</p>		
<p>Description of Evaluate: The children will be assessed whether or not they learned that mixing chemicals together may result in making something with new and different properties.</p>		
<p>Teacher’s Role</p>	<p>Teacher Questions</p>	<p>Children’s Role</p>
<p>Teacher monitors the children’s understanding to be sure they know that they made something new and different.</p> <p>This lesson relates to the Apple in the Dark lesson.</p>	<p>What do you think happens when you mix all the chemicals together?</p> <p>Do you think that we will be able to see our new material in a totally dark room?</p>	<p><i>“They combine together to make something different.”</i></p> <p><i>“Yes, we used glow in the dark paint. We saw Natalia’s glow in the dark fingernail polish when we did the Apple in the Dark investigation.”</i></p>

EXTEND/ELABORATE: *Group Projects, Plays, Murals, Songs, Connections to Real World, Connections to Other Curricular Areas* **Estimated time: 5 – 10 minutes**

Description of Extend/Elaborate: Teacher and the children bring their slime to a totally dark room to investigate whether they can see their slime without light.

Teacher's Role	Teacher Questions	Children's Role
Teacher brings the children to a totally dark room that has been prepared to eliminate any white light.	We are going to go next door to the dark room to see if our predictions are correct. Will we be able to see our slime without any light source?	Children bring their slime to the room and enjoy looking at their slime glow in the dark. They then put their slime into a plastic bag to bring home.

Common Characteristics of Lesson Plans

Get Children into the Learning--Connect to Their Prior Knowledge

Exploration/Investigation/Hands-On Learning

Making Meaning--Teachers and Children Together

Evaluation/Assessment

Extension to the Real World or Other Curricular Areas

Other Aspects to Consider:

The lesson is Child-Centered--the child is listening, speaking, reading, writing and drawing. The child is thinking.

The children talk more than the teacher talks.