Teacher Resource

Civil Engineering

Grades K-2

We are so excited to have you utilize our Stem with Storm videos in your classroom! Innovation One and Education One have partnered together for some fun with our campus mascot, Storm, to share his love of learning with STEM- Science, Technology, Engineering and Mathematics with students near and far demonstrating some fun experiments directly aligned to Indiana State Standards!

The enclosed follow-up activities can be utilized for extended hands-on learning for your scholars. Our goal is to get those young brains thinking and spark the imagination and love of learning of future professionals!

Let's Learn Together with Storm!

A partnership of:

Indiana Standards Connection:

Science Standards:

K-2.E1: Pose questions, make observations, and obtain information about a situation people want to change. Use this data to define a simple problem that can be solved through the construction of a new or improved object or tool.

K-2.E.2: Develop a simple sketch, drawing, or physical model to illustrate and investigate how the shape of an object helps it function as needed to solve and identified problem.

K-2:E.3: Analyze data from the investigation of two objects constructed to solve the same problem to compare the strengths and weaknesses of how each performs.

K.PS.1: Plan and conduct an investigation using all senses to describe and classify different kinds of objects by their composition and physical properties. Explain these choices to others and generate questions about the objects.

K.PS.2: Identify and explain possible uses for an object based on its properties and compare these uses with other students' ideas.

1.PS.1: Characterize materials as solid, liquid, or gas and investigate their properties, record observations and explain the choices to others based on evidence.

2.PS.1: Plan and conduct an investigation to describe and classify different kinds of materials by their observable properties.

2.PS.2: Predict the result of combining solids and liquids in pairs. Mix, observe, gather, record and discuss evidence of whether the result may have different properties than the original materials.

2.PS.4: Analyze data obtained from testing different material to determine which materials have the properties that are best suited for an intended purpose.

Classroom Extension:

STEM with STORM
Civil Engineering

Making Concrete Instructions

Step 1	• Select the clear bag labeled CEMENT • Fill the red cup full of water • Add the water to the bag of CEMENT and seal the bag. Limit the amount of air trapped in the bag prior to completely sealing the bag	
Step 2	• Put bag of CEMENT and water into the gallon size clear bag and seal the bag. Limit the amount of air trapped in the bag prior to completely sealing the bag. • Mix the contents of the bag you're your hands. The bag can be passed throughout the classroom to allow everyone to feel the contents and help with mixing.	
Step 3	• Open both bags and add the yellow bag labeled SAND to the clear bag with CEMENT and water. • Seal both bags. Limit the amount of air trapped in the bag prior to completely sealing the bag. • Mix the contents of the bag you're your hands. The bag can be passed throughout the classroom to allow everyone to feel the contents and help with mixing.	

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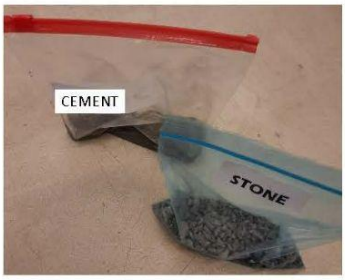
Step 4	• Open both bags and add the red bag labeled STONE to the clear bag with CEMENT, water, and SAND. • Seal both bags. Limit the amount of air trapped in the bag prior to completely sealing the bag. • Mix the contents of the bag you're your hands. The bag can be passed throughout the classroom to allow everyone to feel the contents and help with mixing. • The concrete making is complete	
Step 5	• Place both bags, still sealed, into a form such as a can with both ends removed. • Push the bag into the bottom of the can to remove as many gaps as possible. • Wait 3-4 hours, let students feel the top of the bag. It should feel slightly warm to the touch. This means that the cement is making the concrete hard • Wait 1 day and the concrete can be removed from the can. It is now hard and strong concrete.	 

Name _____

CEMENT

Where do you see Cement being used around you

How does it feel?

What else can you tell me about it?