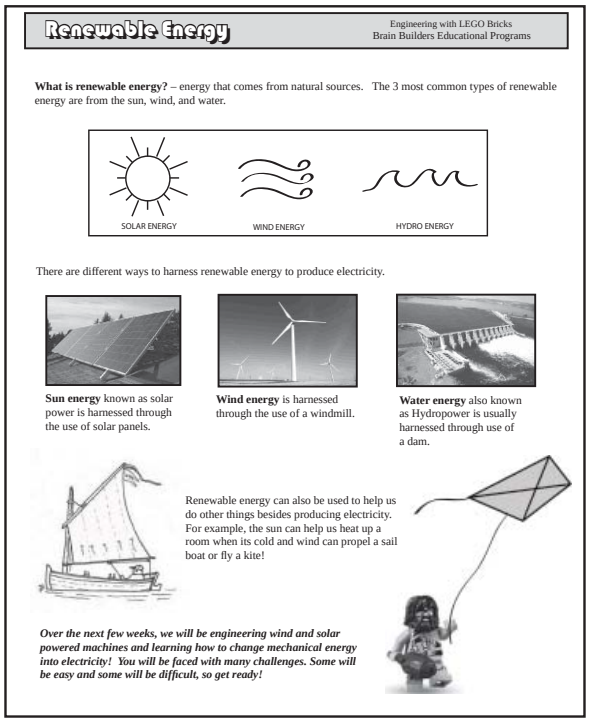
Instructor's Manual: Renewable Energy Day 1

Engineering with LEGO Bricks
Brain Builders Educational Programs

1



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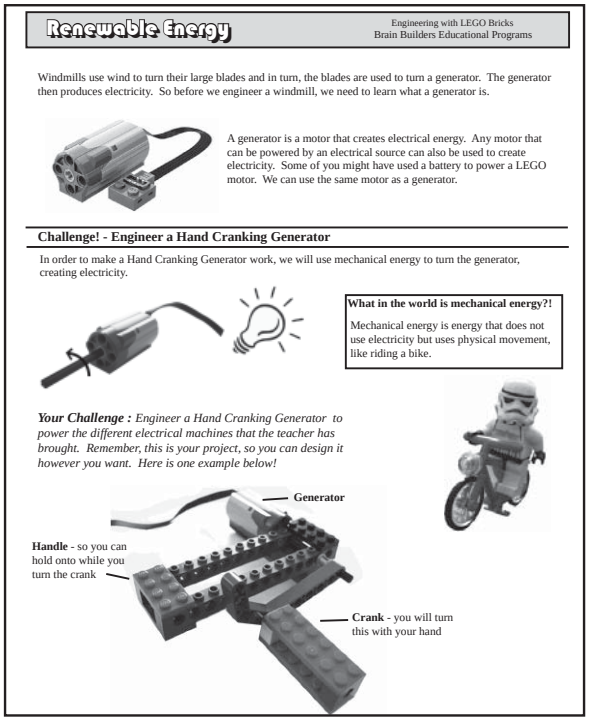

Pass out worksheet 1

-Go over and have students read through the worksheet in class.

-Interactive questions-

- How many of you guys have ever seen a windmill? Have you seen a dam?
- Have you ever flown a kite with no wind? What happens?

Pass out worksheet 2

-Go over and have students read through the worksheet in class.

- Show students the generator they will be working with.

-Interactive questions-

-How many of you know how to ride a bike? How do you ride it?

-Point to be discovered: they are not using electicity but their own strength to turn the pedals, producing mechanical energy.

Introduce Challenge

-Show students your example of the hand crank generator and how it works.
-Show students how to connect the motor so it does not move while you are turning it. This is done by inserting pins on the sides of the motor.
-Show students how the electrical connectors connect.

Challenge 1 - Individual build

-Have students engineer a hand cranking generator and light up the lego house to see whats going on inside.

Challenge 2 - Individual build

-Have students use their hand generator to lift the heavy weight. The weight should at least be lifted up to the horizontal position. Start with less weight and increase it as students complete the challenge.