

Lesson Plan 16 Title: "Let's see where the light is"

Concept / Terminology / Topic to Teach: Electricity, switch, circuit, lamp, model, improving, test

Class Goal(s)/Objectives: When coming closer to an end product engineers start to bring more details in their maquettes and models. Revisit previous representation types, e.g. drawings, sketches, maquettes, and try to add more features to them. Today children will create simple electric circuits and will be prompted to use them within their previous work.

Required Materials: 2 gender neutral puppets, hard paper (or previous drawings or maquettes that the children had done), small light bulbs and sockets, soft cables (preferably not stranded), tape, batteries (different sizes), a premade maquette or drawing with a small light bulb installed on the paper (see instructions bellow).

Setting: Classroom, Large group time, small group time.

Step-By-Step Procedures: During large group time you will start with revisiting what happened in the classes when children were trying to identify electrical elements. Andy had an idea, to take one of the maquettes made for the buildings that Sam's toys will use, and improve it, by adding light in it. Andy shows the children the maquette and starts a conversation about where we could have light in our buildings. Show the improved maquette to the children and test the electrical circuit.

Andy:

-Hey Sam, I was trying to think of more ideas about the building for your dolls, and cars, and the dog and the ball, and I thought... what a cool idea to see how the building will look if it has light.

-I put a light above my bed, because I like to read a book before I go to bed. Where else do you think we can put light and why?

Plan For Independent Practice: Have some hard papers, with some predesigned elements on them (e.g. a front door, a bed, a dining table, a car in a garage). Show the

children how to assemble the light, the socket and the wire. Show the children how to stick the wires to the battery at the back side of the paper. Test the installation. Try different sizes of batteries. Try stacking two batteries together. Try touching the wire to different places. Then make two small holes on the paper showing the design so that the children can place the lamp whenever they chose.

VERY IMPORTANT:

Have the wire pre-cut and cleaned from the plastic wrap at the edges before class.

Ask the children if they want to add more light in other spots and why.

Wire can also be replaced by aluminum foil made into a strip but since this is more sensitive it can easier be destroyed, and there might also be conductivity issues.

Closure (Reflect Anticipatory Set): End the class by asking every child why he/she thinks the light should be placed there.

Assessment Based On Objectives: Every child should have installed a light bulb on the paper and have it successfully turned on by touching the battery with the wire.

Possible Connections To Other Subjects: motor skills improvement, language (while discussing the elements), science (when discussing electricity), reasoning.

Installation instructions.

Place the light bulb in the socket. Cut two pieces of wire and clear the edges from the plastic cover. Attach one wire to the one side of the socket and one to the other. Use tape if needed to make the connection more stable. Touch one wire to the one end of the battery and the other wire to the other side of the battery. Lamp should be turned on.

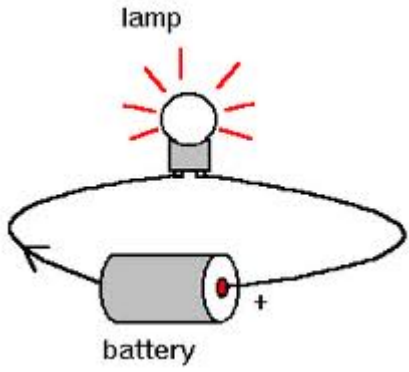


Image to be placed on the cardboard:

