

Lesson Plan 1 Title: "I have a great idea!"

Concept / Terminology / Topic to Teach: engineer, desire, discussion, usage

Class Goal(s)/Objectives: Engineering usually is initiated by someone's desire to create and construct something new or to alter something that already exists in order to achieve a new goal. The new idea can come either from the engineer or from someone who is talking about it. Most often, ideas come to pass out of a problem that needs to be solved, but it can as well be just the desire someone has to construct something new.

Required Materials: Two gender-neutral puppets, a drawing representing the puppets talking about their first idea (presented below), a piece of cardboard on which to place the image (the cardboard should be relatively big since more drawings will follow in order to finally represent the whole engineering cycle). A second cardboard (smaller) would be helpful, on which the children can draw their ideas and write the answers they may give in class.

Setting: Classroom, large group time, SG time.

Step-By-Step Procedures: During LG time you will be introducing the topic to the children using two gender-neutral puppets representing two children (appearance will be neutral and so will be the names (i.e., Andy and Sam). An alternative to puppets can be children made out of Popsicle sticks. The following scenario is to be presented. "Sam had some dolls and some cars and the rest of the toys in a doll house. Sam threw a birthday party and now there are more dolls, cars. and toys so the doll house is not big enough so Sam is asking Andy, who is an engineer, about new ideas."During this skit, the children in class can be asked the following questions:

Sam: I think I will go to ask my friend Andy, who is an engineer, and see what Andy thinks about it. Children, do you know what an engineer is/does? Does anyone have a parent who is an engineer? What does he/she do?

Possible answer you can give after listening to their answers: “An engineer is someone who thinks, designs, and builds things that people use. They can be very big, like a house, a bridge or a rocket; they can be smaller, like a car or a computer; or they can be really small, like a telephone.”

Use a part of the small cardboard to draw images of what an engineer might build (or let the children draw it themselves if time allows).

Sam: Andy I want all my dolls, cars, and toys to have a house to live in. Do you have any ideas about what we could do about it? Or... let’s ask the children first. Children, do you have any ideas about where my new dolls cars and toys can live?

Use a part of the small car board to write down/draw images of the possible solutions (or let the children draw it themselves)

Do not propose a final solution to the children. Tell them you will think about all of their ideas, that you will discuss it again next time class, and encourage them to talk about it among themselves or with their parents and see if they will have any new ideas.

Plan For Independent Practice: During SG time, ask the children to look around them and see if they can think of anything an engineer might have made in the classroom. Then, they can draw a picture of it on the Engineer cardboard too. Ask the children why they think the engineer designed this object and whose idea it might have been.

Closure (Reflect Anticipatory Set): Revisit the object the children have selected to draw.

Assessment Based On Objectives: The children should appear to become familiar with the idea that an engineer imagines, designs, and constructs things by identifying objects that an engineer has designed. They should also understand that the idea may come from someone else’s desire.

Possible Connections To Other Subjects: Math (count the objects children are identifying), Language (learn new vocabulary), Art (drawing).

Sample of image to be placed on the cardboard:

