



Teacher Resource:

Back to Back Construction

Sponsored by the Martha Holden Jennings Foundation

Back to Back Construction

This lesson was developed by Mr. Robert Steinline, a Technology Education teacher at Springfield Middle School, as part of a collaboration project between the Toledo Museum of Art and area educators. It is intended for 6th–8th grade students.

Goals: To develop the ability to technically describe an assembly of geometric shapes created with Legos to a degree of accuracy that another learner can replicate the assembly.

Objectives: Students will orally describe assemblies to another student to the degree that the second student can re-construct the assembly from a verbal description only.

Common Core Standards:

CCSS.ELA-Literacy.CCRA.R.7 Integrate and evaluate content presented in diverse media and formats, including visually and quantitatively, as well in words.

CCSS.ELA-Literacy.CCRA.SL.2 Integrate and evaluate information presented in diverse media and formats, including visually, quantitatively, and orally.

Visual Literacy Skills: Close Looking, Description

Materials: Back-to-back seats with tables facing forward, Lego building blocks, digital camera, timing device

Length: 25–30 minutes

Step 1: Assign students a partner.

Step 2: Set up chairs with the backs toward each other. Have desks on the outside. Focus on one student not being able to see the other's desk. Have the students facing away from each other.

Step 3: Have one student in each pair create a random shape with 10–15 rectangular Lego blocks. The student's partner should not see the shape.

Step 4: Explain that the student who has just built the shape is now the "Describer", and his/her partner is the "Builder". Only the Describer may talk, the Builder may not ask questions. Explain that the Builder will have 10 minutes to create the assembly the Describer describes to them. Colors, angles, numbers of pins engaged, stack height, etc. may be used in description.

Step 5: Declare a group start, give a 5-minute warning, a 1-minute warning, and a finish. Communication and construction is to stop at that time.

Step 6: Allow learners to see how close they got to the described assembly. Take pictures of the described construction and the created construction with each labeled, including Describer and Builder names. Switch sides and complete the exercise again with a new construction.

Ask the larger group to consider the following:

What are some of the challenges they encountered?

What kind of strategies did they use in their descriptions?

What kind of vocabulary did they use?

Where there any challenges in the vocabulary? How did they deal with this?

Would it have been easier or more difficult had the “Builder” been able to ask questions?

Where would such an activity have application in “the real world”?

What would you have done differently?

Think about the task of writing technical manuals that require exact instructions. What kind of a challenge do you think this would be?