

Guidelines for Teachers - Activity 2: Transformations

Description:

This activity presents students with 2 procedures. These two procedures namely *Line_Segment1* and *Line_Segment2* produce 2 different line segments. The activity requires students to draw 2 squares and other complex figures with and without the use of given line segments.

Objectives:

Upon completion of this activity, students should be able to:

1. Understand the concept of rotation about a point
2. Understand the concept of modularity
3. Understand the use of a repeat block

Student's Prerequisites:

Students should be familiar with:

1. StarLogo TNG environment
2. Drawing a square

Student's Task:

1. Students will create the different squares and figures using different procedures and the repeat programming block. See *Learner Activity Sheet 2: Transformations*.

Lesson Plan:

Before students start individual/pair work:

1. Demonstrate how to create a turtle by double-clicking on the *setup* programming block.
2. Show how to create a square using the procedure *Line_Segment1* to demonstrate the concept of modularity as well as to clarify the intended meaning of the instructions provided in the learner activity sheet.
3. Illustrate use of blocks not encountered previously
 - *repeat* programming block and logic involved in using it

This activity involves concepts such as modularity and rotation of a figure about a point. Understanding of the use of the *repeat* programming block is also required. Creation of the more complex figures with the use of pre-defined procedures allows students to apply their understanding of modularity. The creation of the more complex figures without the use of pre-defined procedures allows students to hone in on their problem solving skills.

Outline of Suggested Solutions found in Transformations_Solution.sltnng :

- Procedure *Line_Segment1_Square* produces the solution to Question 2.
- Procedure *Line_Segment2_Square* produces the solution to Question 3.
- Procedure *Drawing4a* produces the solution to Question 4a.
- Procedure *Drawing4b* produces the solution to Question 4b.
- Procedure *Square5* produces the solution to Question 5.