

Lesson Plan – Tiles

Goals:

Exercise and improve strategic thought and 2D geometry skills.

Commented description of materials to be used:

In the Tiles exhibit, 12 square tiles must be placed on a 4x3 grid to form a path. There are 4 different designs for the tiles, which means they can be sorted in 4 sets of 3 identical tiles.

The grid features a starting point and a finish point. These are the only entry points. The rest of the grid is blocked by a fictive wall.

Suggestions:

We recommend making the tiles in a material more durable than paper or to laminate them if you are using paper. Otherwise, they might need to be replaced quite often.

Strategies:

The exhibit offers two challenges to the learners, in order to train their competencies in problem-solving and 2D geometry. In the first challenge, they must determine if it is possible to form a continuous path that goes from start to finish using the 12 tiles. In the second challenge, they are asked what is the smallest amount of tiles necessary to connect the starting point and the finish point. In both cases, they need to experiment with the tiles in order to find an answer.

Suggestions:

Other activities can be imagined to train other skills (see Worksheet). You can also change the location of the starting point and the finish point and ask the same questions.

This exhibit's initial goal is to demonstrate how symmetry can be applied in a practical context. But it can also go further as you can ask the learners to calculate a perimeter or an area.

Appraisal / Evaluation of Students:

The different challenges allow the learners to see the mathematical topic in different ways, and thus reinforce their newly acquired competencies.

Assessment of lesson:

At the end of the lesson, the learners should have a better understanding of 2D geometry. During the lesson, the challenges do not increase in difficulty because it is the creative approach to a logical problem that matters the most.

Suggestions:

If you want to add a degree of difficulty, try an activity where you change the starting point and finish point several times. Print two labels that say "Start" and "Finish" and place them anywhere on the grid.

Closure:

Ask the learners what they thought of this activity and determine what the weak and the strong points are. This will allow you to improve the activity for the next time you implement it.

Suggestions:

You can prepare a series of questions to ask the learners at the end of the lesson.