

Grade 8 Math & Science Learning Opportunities

Week of June 8th

MATH

Mathematical Art: Tessellations

1) Mathematical transformations

- Translations
- Rotations
- Reflections

and introduction to Tessellations

<https://youtu.be/0Z1aUhGCzS0>

2) What is a tessellation (examples)

<https://youtu.be/7GiKeeWSf4s>

3) Your task this week:

Create your own mathematical artwork (Tessellation).

You get to choose the level of complexity from one of the next three boxes!

EASY

Use Translations

START WITH A SQUARE OR RECTANGLE

- A step-by-step guide for creating tessellations
<http://sofia.nmsu.edu/~pmorandi/math112f00/EscherRectangle.html>
- (0:00 to 0:44) <https://youtu.be/Vm4zLz1DtkM>

MEDIUM DIFFICULTY

Use Rotations

START WITH A SQUARE

- <https://youtu.be/lejiRI9paFc>
- (0:45-1:28) <https://youtu.be/Vm4zLz1DtkM>

START WITH A TRIANGLE

(Slightly more difficult, need a protractor)

- How to Make an Escher-Esque Tessellation
<https://youtu.be/212XC1zfxXY>
- Another similar explanation (2:15 to end)
<https://youtu.be/Vm4zLz1DtkM>

CHALLENGE YOURSELF!

Combine Mathematical transformations

TRANSLATIONS AND REFLECTIONS

- (1:29 to 2:14) <https://youtu.be/Vm4zLz1DtkM>

DIGITAL INSTEAD OF BY HAND

- <https://youtu.be/3Od3WkAxAR0>
- https://youtu.be/sxcvtj_6og
- https://youtu.be/K5fh6Xb_6tA

(Optional) Would you like to know more about M.C. Escher and his mathematical art?

- Video on this website (5:44) <https://www.pbs.org/newshour/show/artist-m-c-escher-spent-a-lifetime-distorting-perspective>
- (3:59) <https://youtu.be/Kcc56fRtrKU>
- The Art of the Impossible: MC Escher and Me - part 1 of 2 (15:02) <https://youtu.be/f7kW8xd8p4s>
- The Art of the Impossible: MC Escher and Me - part 2 of 2 (13:35) <https://youtu.be/1CYrGpd8k5w>

SCIENCE

Follow this link to watch the video and answer the questions below.

<https://www.youtube.com/watch?v=zrv-tRd-btE&t=379s>

Name : _____ Class : _____ Date : _____

Bill Nye : Pressure

1. What is pressure? _____

2 a). Give two uses of pressure: _____

2 b). Something has pressure because it **has a mass / does not have a mass**. (circle)

3. What is the absence of pressure called? How does it work? _____

4. How does a vacuum cleaner work? _____

5. Which of the three forms of matter (solid, liquid or gas) is influenced by pressure? _____

6. Why are turbines of hydro-electric dam installed at the base of a dam not right at the top? _____

7. Give examples of very sturdy solids a water jet may cut through. _____

8. The head of a nail OR the heel of a high-heel shoe sink in well because... _____
