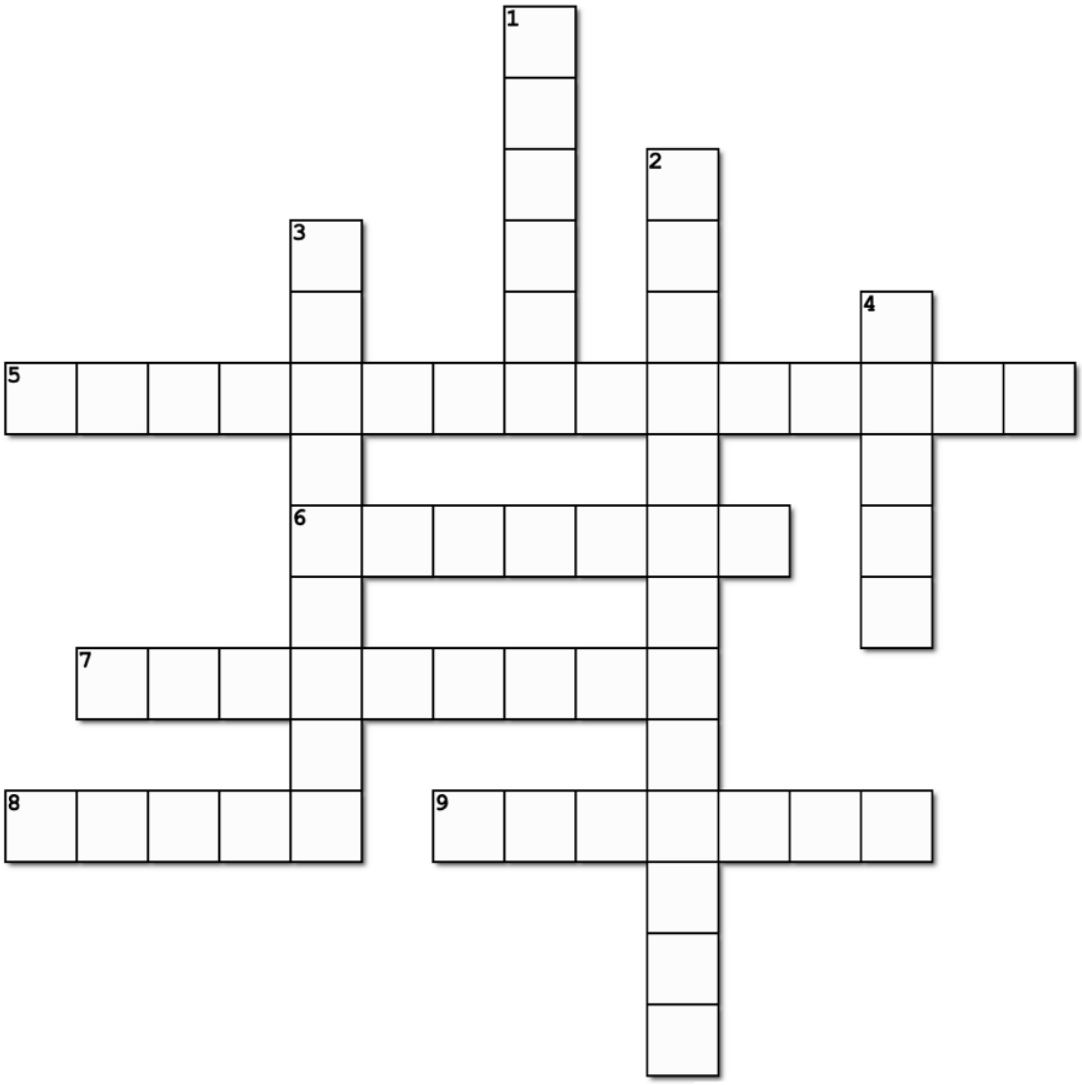
Let's Review

The crossword puzzle below includes terms and ideas we learned about in the YPC video.
Complete the puzzle to see what you remember!



Across

5. This musical form features melodic strains (A, B, C) that alternate in a pattern
6. The xylophone is played with mallets made of this material
7. A percussion instrument that is similar to the marimba, but has a higher range.
8. The xylophone plays notes that are higher than the marimba. This means it has a higher _____ than the marimba.
9. This percussion instrument has wood bars and metal resonators. It is an IDIOPHONE and has DEFINITE PITCH.

Down

1. Shorter bars or tubes means a _____ pitch
2. A sound with a specific note or pitch
3. An instrument that vibrates to make sound
4. Longer bars or tubes means a _____ pitch

Let's Put it into Action!

We have learned about patterns and forms in music (MULTI-STRAIN FORM) and in nature (the rain cycle). Now, let's see some other patterns in nature and make some for ourselves.

Patterns exist all around us in nature. Many of the patterns we see are called **TESSELLATIONS**.

- A **TESSELLATION** is a pattern made with polygons that has no gaps, spaces, or overlaps and fills the space it is in. We can think of **TESSELLATIONS** like a puzzle – the polygons fit together perfectly.
- A polygon is a shape with three or more sides.

Below are some examples of **TESSELLATIONS** that are around us every day.

Honeycomb

Pineapple

Giraffe fur

Sunflower

Make Your Own Tessellation!

Before you begin "tessellating," let's see how this project connects to STEAM learning.

Science: Tessellations are found in nature all around us (see examples above).

Technology: This refers to the skills, methods, or processes used to achieve goals. Our processes and methods are outlined in the steps below and our end goal is to create our own tessellation.

Engineering: We will design our own polygon (shape) and use it to create an original tessellation.

Arts: Forms and patterns in music provide structure and help us understand what we are playing and/or hearing. Revisit the accompanying video to review multi-strain form and see and hear it in *Log Cabin Blues*.

Math: We will measure and design our own polygons and better understand how shapes are used to create tessellations.

What You Will Need

1. A lined index card
2. Tape
3. Pencil
4. Scissors
5. Ruler
6. Piece of white paper (8.5 X 11 or larger)
7. Crayons, colored pencils, markers, etc.

How to Make A Tessellation

We got the idea for this activity from teachkidsart.net. Check out the directions with illustrations at the following link: https://www.teachkidsart.net/tessellations/.

1. Cut a lined index card to 3”x3”.

2. Next, cut a shape from one side of your 3”x3” card, and slide it to the opposite side of the card, without flipping it over or turning it. (The lines on your index card will show you if you’ve flipped or turned it!)

3. Now, tape the shape so that it is exactly across from the spot you cut it from. If you include a corner in your cut, it makes it easier to line the shape up on the opposite side. (For older students, you can make this project more challenging by having them repeat this step on an adjacent side of their card).

4. Turn your newly created shape (we’ll call this your “tile”) in different directions and use your imagination to see if it “looks like” anything. Lightly sketch your idea onto your tile…. be creative!

5. Place your tile on the center of a 9”x12” paper and carefully trace around it.

6. Now, pick up your tile and place it next to your traced design, as if it were a piece fitting into a puzzle. There shouldn’t be any gaps or overlapping. Then, trace around your tile again.

7. Repeat this step until your whole paper is covered and there are no gaps or spaces.

8. Trace over your pencil lines with a Sharpie and add details to each shape to help others recognize what you “saw” in it. (Remember that whatever details you add to one shape, will need to be added to EVERY shape! Keep your details simple.)

9. Finally, color your design with markers, colored pencils, or crayons.