# Lesson Plan Components - Grades 1-12

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| **Subject/Course:** Math | **Name:** Adapted from EDUC 4736 teacher candidates' plans |
| **Grade Level:** Grade 1 | **Date(s) & Time(s):** Sept. 27, 2019, 10:30 |
| **Topic:** Patterning | **Length of Lesson:** 50 Minutes |

**EXPECTATION(S)**

**Specific Expectation(s):**

- Identify, describe, and extend, through investigation, geometric repeating patterns involving one attribute (e.g. colour, size, shape, thickness, orientation)
- Create a repeating pattern involving one attribute (e.g. colour, size, shape, sound)

**Learning Goal(s)/Refined Expectations(s):**

Learners will engage in a read-aloud of the book *Pattern Fish* by Trudy Harris and illustrated by Anne Canevari Green, participate in the movement exercise throughout the book, observe/Investigate a variety of pictures of underwater life to discover and identify natural patterns, work in groups to create a pattern, 'gallery walk' around to the other tables and extend the pattern by identifying and following the pattern.

**Success Criteria (if appropriate):**

- identify the patterns AB, AAB, ABC;
- create movements in a pattern;
- create a repeating pattern with foam shapes.

**ASSESSMENT/EVALUATION**

**Curriculum**
Strategy: Demonstration of movement patterns    Recording Device: Anecdotal notes

**Learning Skills**
Skill(s): Collaboration   Recording Device: Anecdotal notes, see Appendix A

**DIVERSITY AND INCLUSIVITY**

- Learners have a preliminary understanding of patterns such as the ability to recognize simple repeating elements
- Physical: JR has vision impairment. The teacher will guide him to his group and monitor him from a distance. The goal is to try and get him engaged with his group in deciding how to create this pattern. However, the teacher will monitor JR to see if he would require any additional assistance and step in if necessary.
- LD: RT has ASD. Teacher will monitor RT on how well he is working in his group. If the teacher notices he is getting triggered because of the sound/noise of the classroom, the teacher may need to remove RT from the situation and allow

him to regulate his emotions. Inquire if an EA is available to work with RT directly and if an EA is available, allow the EA to use his/her discretion with how to proceed with RT in working the group.

- ELL: ML speaks French and will be working with her neighbour SD, who is bilingual and whom she has bonded with. In addition, ML has both SD and her other tablemates to assist in this activity. Teacher can come by and engage in some dialogue to see if ML knows what to do and on track.

**LEARNING ENVIRONMENT (Physical Space)**

- Learners sit at the carpet during read-aloud
- Learners stand in a circle around the carpet for the patterned movement exercise.
- Tables are pushed slightly away from carpet to give more room for movement
- Tables are already arranged in groups of four

**RESOURCES AND MATERIALS**

- *Pattern Fish* by Trudy Harris, illustrated by Anne Canevari Green (See Appendix 1.2)
- Seashells, and ocean examples to pass around class before the read-aloud
  - o   If there are no physical examples, then use pictures on the projector/SMART board
- School pattern shapes
- Words to add to the word wall (pattern, repetition, colour etc)

**TEACHING/LEARNING SEQUENCE**

**Beginning***/Activation*:

- (15 minutes) Teacher will bring in seashells and coral reef examples for the learners to investigate, identify and think about what they notice.
  - o   If no physical items are available, use visual pictures on the projector/SMART board. The teacher will engage in 'group discussion' by asking learners to identify any patterns found within the natural environment.
    - ▪   *Tell me what you notice about the seashells?*
    - ▪   *What colours do you see?*
    - ▪   *What shapes do you notice?*
    - ▪   *Are these colours used more than once?*
- Teacher will engage the learners in a whole group interactive reading of the story *Pattern Fish* by Trudy Harris. Teacher will pause at each page to explore the different patterns through a variety of approaches: integrating action movements to the words, verbal cues, and by asking the learners to identify various patterns found within the illustrations.
  - o   *Pattern Fish* by Trudy Harris is a great tool to introduce various methods on how to determine "what comes next" in a pattern that can be practiced together as a class
  - o   Encourage learners to come up with unique body movements or voice cues for the words during the interactive reading

**Middle***/Action/Application/Exploration*:

- (15-20 Minutes) **Modelling**: Demonstrate the use of various body movements and voice cues during the whole group reading of *Pattern Fish* by Trudy Harris.
- Visual Tool: Create a **bubble map** to list the different types of patterns that were in the story *Pattern Fish*
  - o   Introduce pattern identification: AB, AAB, ABC… etc.
  - o   Use images from the book to reinforce understanding

- For example the octopus goes "stretch", "spurt", "glide". The teacher will explain that the letters A, B, C represents each movement.
- Provide an image pattern of the octopus doing each movement with the associating letter to support learner understanding through visual aids
  - o Add new words to the **word wall** for learners. Words like: repetition, pattern, and colour will be used a visual reference and reminder.

- (5 minutes) Learners will stand-up and create a circle around the carpet
- The teacher leads the class in creating a pattern with movements
  - o Begins with asking a quick questions about what an AB pattern
  - o Picking a learner (BB) to demonstrate the pattern through clapping or movement
    - Teacher begins with an 'A' movement
    - Learner beside makes up another movement/action
    - Pattern continues around the circle until it reaches back to the teacher
  - o Teacher can choose learner to begin an ABC pattern and repeat the above steps
  - o (If time allots) teacher can introduce AAB and ABB patterns

- (10 minutes) Gallery walk and group discussion- The class will be separated into small groups of 4 and they will be provided with foam shapes. Using the foam shapes, each group will create a repeating pattern. After 5 minutes ask the groups to rotate. The next group will extend the pattern. Repeat after 2-3 minutes until each group returns to their own table.
- Whole group will gather around each table and the teacher will facilitate a discussion on the pattern
  - o What do you notice?
  - o What makes this a pattern?
  - o What is changing?
  - o What type of pattern is it?
  - o What strategies did you use to help you extend the pattern?
  - o How would you improve on this pattern?
- Contingency plan: If not yet able to work in small groups, use smart board and smart table to have selected learners have more practice with responses revealed.

**End**/*Consolidation/Communication*:

- Since snack is fast approaching, the teacher does one more activity with the kids involving the game '*20 Questions*'
- Teacher thinks of an animal (zebra, bee, etc.) and starts giving the class clues as to "What Am I?"
- Those that have guessed correctly may go and grab their snack
- Continue to think of animals or objects that have patterns - continue to involve those that are already eating to participate

**REFLECTION**

- JR had a good time working with his group as he required little assistance from the teacher. His peers were rockstars in helping JR with difficult tasks such as movement around the room and creating a pattern that accommodated his needs. As a group they decided they would perform the movement pattern at a slower pace in order for JR to participate.
- RT had a difficult time engaging in the carpet circle movement exercise due to the fast nature of the movement
  - o He needed extra time to process the movement and action within the sequence
  - o RT was encouraged and praised for his hard work and determination in participating in the exercise

- o During the round robin RT worked well with his group and was engaged in the discussion. However, RT needed a few reminders to refocus and stay on task
- ML worked well with SD and her group.
  - o During the movement exercise on the carpet she performed well especially following after SD
- Group collaboration was a key factor in the success of this activity; all learners contributed to the positive talk environment which allowed everyone to participate equally. The learners were all eager to share their movement patterns
- Learners were engaged throughout the lesson because of the high-energy and movement factor
  - o This lesson is very good for kinesthetic, visual/spatial and musical learners
- This will help introduce the learners to the term and concept of attributes and in the creation of more complex patterns
- As an introductory class to the pattern unit, future lessons will delve further into complex concepts with the hopes that the learners will be able to successfully create an AB pattern with little to no assistance

## Appendix A

Anecdotal Notes for Collaborative Group Work and Movement Presentation

| ANECDOTAL NOTES | Teacher: | Subject: | Grade: |
|---|---|---|---|

| LEARNING SKILLS CODES | E= Excellent    G=Good    S=Satisfactory    N=Needs Improvement | | | |
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| **C:** Collaboration<br>**R:** Responsibility<br>**O:** Organization<br>**I:** Initiative<br>**SR:** Self-Regulation<br>**IW:** Independent Work | **Learning Skill:**<br>The learners will collaborate with their peers during the activity to discuss, extend, and create repeating patterns. | | | |
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| | **Date & Learning Skill:**<br>September 27th, 2018 | **C** | **I** | **S R** | **Observation Notes** |
| 1. AA | | G | G | E | A.A. demonstrated an improvement in self-regulation by remaining focused as he worked collaboratively with his peers during the creation of their pattern sequence at the table. |
| 2. MA | | S | G | G | M.A. had a difficult time working with his peers. We brainstormed different strategies with M.A. that could support him during collaborative group work. |
| 3. CC | | E | G | E | |
| 4. SD | | E | E | E | S.D. worked very well with her peer group. She assisted M.L. by encouraging her to join in with her peers during the group presentation. |
| 5. GE | | G | E | S | |
| 6. EF | | G | G | S | |
| 7. | | | | | |
| 8. | | | | | |

Appendix A: Ontario Ministry of Education (2010). *Growing Success: Assessment, Evaluation and Reporting in Ontario Schools: Covering Grades 1 to 12* (First Edition) Toronto: Ministry of Education, p. 11.
http://www.edu.gov.on.ca/eng/policyfunding/growSuccess.pdf