THOMPSON RIVERS UNIVERSITY | Education & Social Work

Bachelor of Education (Elementary) & Bachelor of Education (Secondary) STEM Lesson Plan

Lesson Title:	5.2 Frequency tables, Histograms and frequency polygons	**Lesson #**	Block B	**Date:**	**3/10**
Name:	Yiming Zhang	**Subject:**	Foundations of mathematics	**Grade(s):**	11

Rationale:

Organizing and evaluating data is an important part of statistics. Students will be able to create frequency tables and graphs from a set of data.

Core Competencies:

Communication	**Thinking**	**Personal & Social**
Acquiring and presenting information – Being able to acquire information during notes and present their understanding with the homework – Clearly communicating their mathematical understanding and work – Students will be able to discuss with their neighbors, share and develop ideas. – Students will work collaboratively to solve problems. – Students will show proper steps when doing math problems using math language.	Critical Thinking Analyzing and critiquing – Analyzing the questions in the student's notes and critiquing their answers Creative thinking: - ask what the advantages and disadvantages are for histograms and frequency polygons?	Personal and Cultural identity - Acknowledge personal strengths and abilities as assets

Big Ideas (Understand)

Statistical analysis allows us to notice, wonder about, and answer questions about variation.

Learning Standards

(**DO**)	(**KNOW**)
Learning Standards - Curricular Competencies	**Learning Standards - Content**
• Reasoning and modelling Estimate reasonably and demonstrate fluent, flexible, and strategic thinking about number Model with mathematics in situational contexts Think creatively and with curiosity and wonder when exploring problems	**Posing a question about an observed variation, collecting and interpreting data, and answering the question**

• Understanding and solving Apply flexible and strategic approaches to solve problems Solve problems with persistence and a positive disposition • Communicating and representing Explain and justify mathematical ideas and decisions in many ways Represent mathematical ideas in concrete, pictorial, and symbolic forms Use mathematical vocabulary and language to contribute to discussions in the classroom Take risks when offering ideas in classroom discourse • Connecting and reflecting Connect mathematical concepts with each other, other areas, and personal interests Use mistakes as opportunities to advance learning	

Instructional Objectives & Assessment

Instructional Objectives (students will be able to…)	Assessment
• **Understand frequency distribution, histogram and frequency polygon.** • **Have an idea of how to organize data**	• **Homework: p 221, 1-4**

Prerequisite Concepts and Skills:

- **Calculate average of data**

Indigenous Connections/ First Peoples Principles of Learning:

There is no Indigenous Connection for this lesson.

Universal Design for Learning (UDL):

I will write down all the definitions. I will write down and underline all new vocabulary. I will use different colors of pens. I will always ask if anyone needs more time for copying notes. There is discussion time so that everyone is able to share their ideas. During work time, anyone is welcome to ask me questions about anything they don't understand. I will ask if anyone need the hardcopy of notes.

Differentiate Instruction (DI):

I will be adjusting amount of work for those students with IEP and allowing them to work in LAC and getting extra time and support.

Materials and Resources

FM 11 textbook

Lesson Activities:

Teacher Activities	Student Activities	Time
Introduction (anticipatory set – "HOOK"): I will review about the vocabulary I taught yesterday. I will write the words on whiteboard, and students need to explain each vocabulary to their neighbors and make sure everyone understands.	Students will discuss with neighbors.	8 min
Body: Then I will write notes on tablet. I will introduce frequency distribution. I will give an example of frequency of snaps, and draw the histogram and frequency polygon with them. I will ask what the advantages and disadvantages are for this method of showing data. If I didn't do it yesterday, I will distribute the homework self-assessment sheet for this chapter. I will give them homework with my expectations.	Students will copy down notes.	20min 10min
Closure: . The rest of class, I will circulate and ensure every student gets the concept, and answer question from homework.	Students will do homework and ask questions.	25 min

Organizational Strategies:

- **Textbooks will be prepared for students in advance**
- **Students have to write down their names on left side of board if they want to borrow a textbook, and erase it when return books back**

Proactive, Positive Classroom Learning Environment Strategies:

- Providing expectations for students about homework
- Students can work with other students they are comfortable with and have worked with previously
- Teacher will be circulating to answer questions and observe students

Extensions:

- **Challenging homework questions will be prepared for extensions. P2123 7**

Reflections (if necessary, continue on separate sheet):