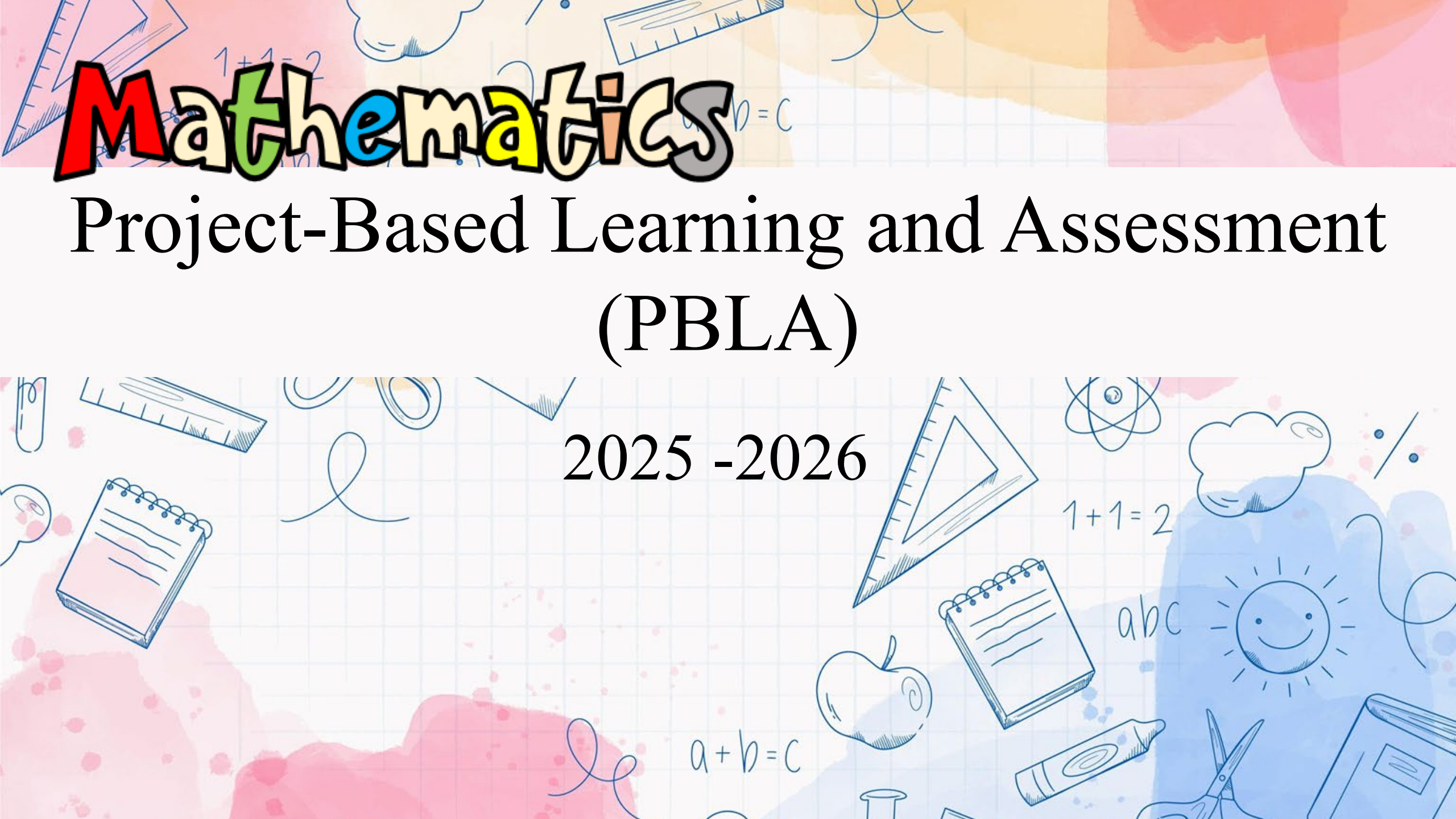
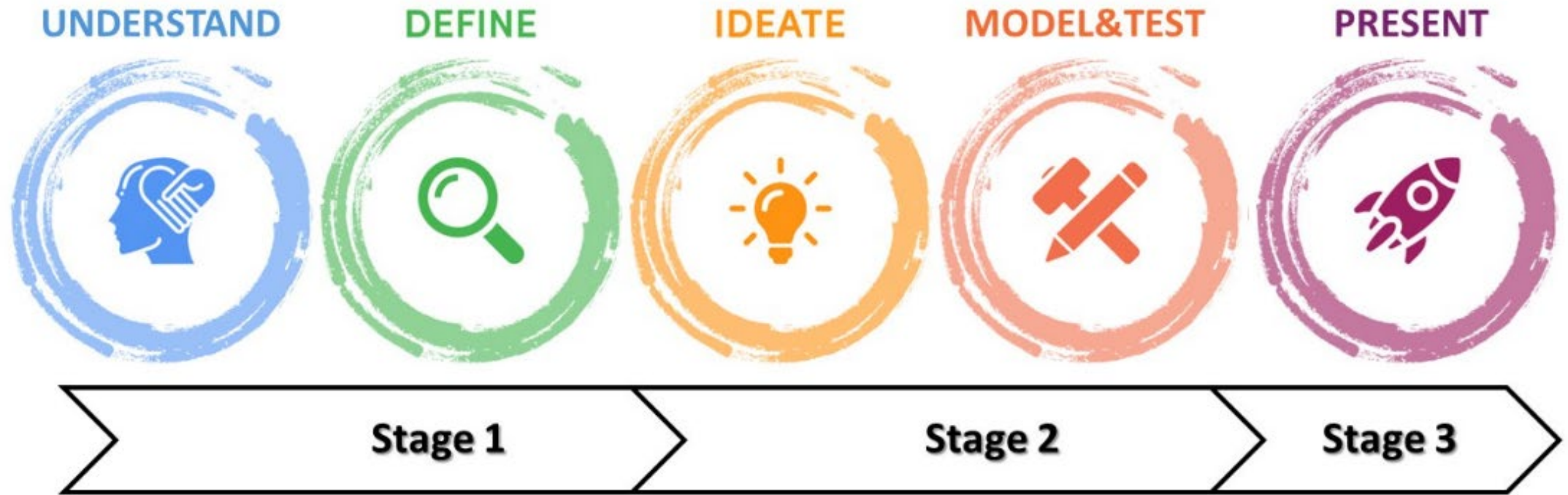


The background of the entire slide is a collage of hand-drawn school-related items. At the top, the word "Mathematics" is written in a large, colorful, bubbly font. Below it, the text "Project-Based Learning and Assessment (PBLA)" is centered in a black serif font. Further down, the years "2025 -2026" are also centered. The background features various sketches: a ruler, a protractor, a notebook, a pencil, a cloud, a sun, a book, a pair of scissors, a crayon, an apple, a percent sign, and several mathematical equations like $1+1=2$, $a+b=c$, and abc . The colors are soft pastels like pink, blue, and yellow.

Mathematics

Project-Based Learning and Assessment (PBLA)

2025 -2026



UNDERSTAND



Understand: Students explore the context of the challenge, build empathy and identify real needs by asking questions, observing and gathering information.

• **الفهم:** يستكشف الطلاب سياق التحدي، ويبينون التعاطف، ويحددون الاحتياجات الحقيقية من خلال طرح الأسئلة والملاحظة وجمع المعلومات.

DEFINE



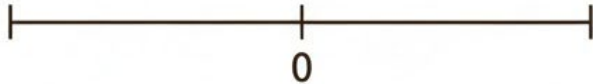
Define: Students analyse their findings to identify the root cause of the problem and write a clear problem statement to guide their solution.

• **التعريف:** يقوم الطلاب بتحليل النتائج التي توصلوا إليها لتحديد السبب الجذري للمشكلة وكتابة بيان واضح للمشكلة لتوجيه حلهم.

REGULAR CANTEEN QUEUE



PRE-ORDER SYSTEM



**PROBLEM: BREAKTIME IS TOO SHORT!
BUT... HOW MUCH TIME *REALLY* LOST?
AND CAN MATH HELP US SOLVE IT?**

**MATH CHALLENGE: USE INTEGERS & ABSOLUTE VALUE!
HOW DOES A 'SMART CANTEEN' WORK? LET'S FIND OUT!**

Scenario 1: Smart Snack Pickup: Faster Lines, Smarter Choices

During break time, students often stand in line to buy snacks. This can take time and may reduce how much of the break students can enjoy. Some schools use a different method called a pre-order pickup system. We want to find out which method works better for Grade 6 in our school.

To explore this, students will simulate both methods for their own classroom:

- The normal canteen line.
- The pre-order pickup system, where students either receive their order in the classroom or go directly to pick up their snack. (Note: students are allowed to develop new methods).

Students should measure the waiting time in each method and repeat the experiment more than once for a fair and reliable result.

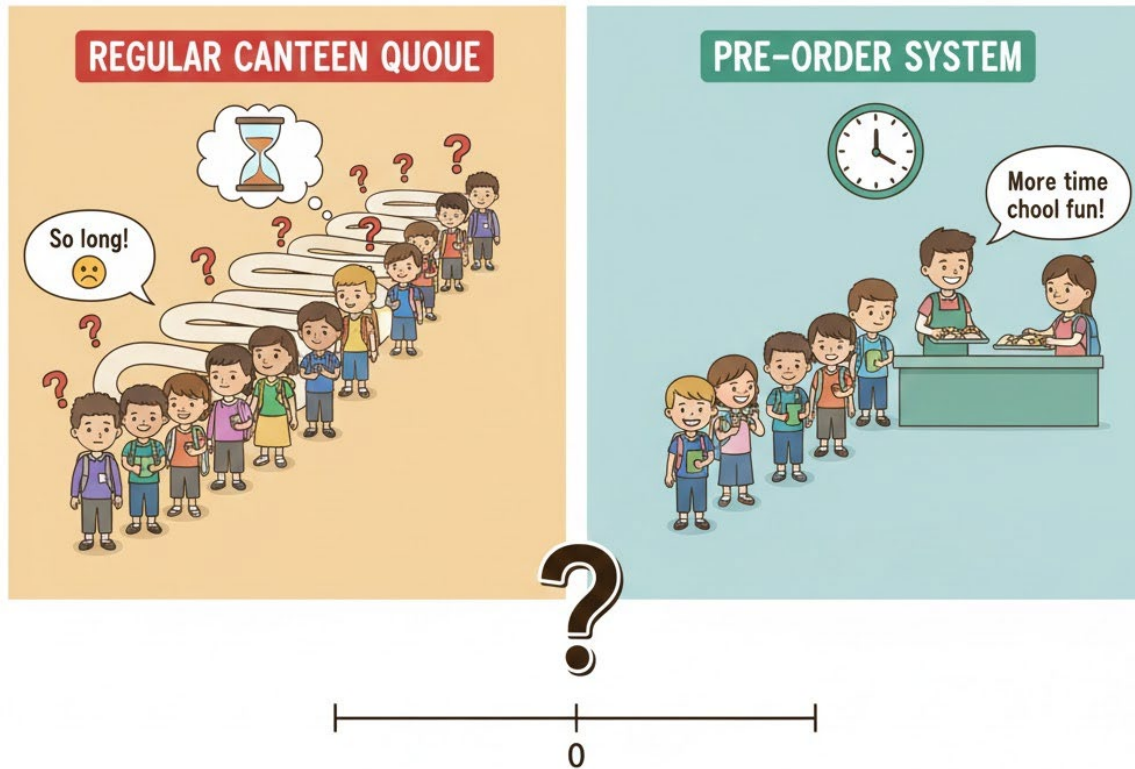
After collecting the waiting times, students should:

- Use positive and negative integers to describe the difference in waiting times, then place these numbers on a number line to compare the two methods.

Use the absolute value to understand how large the time difference is.

- Finally, make a conclusion, based on the evidence, about which method Grade 6 should use, and suggest a technological solution that could make the process easier.

Mathematics



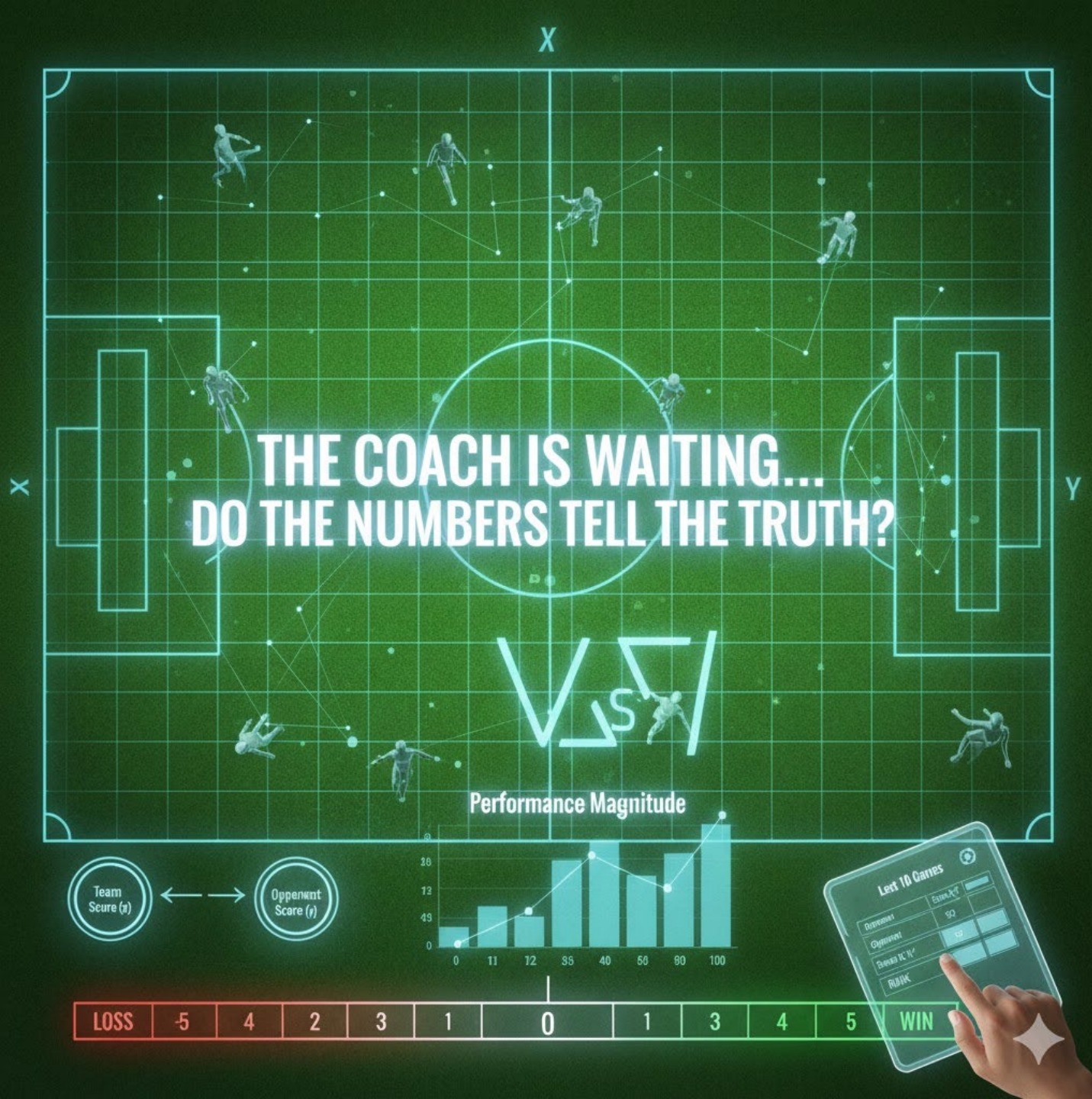
**PROBLEM: BREAKTIME IS TOO SHORT!
BUT... HOW MUCH TIME *REALLY* LOST?
AND CAN MATH HELP US SOLVE IT?**

**MATH CHALLENGE: USE INTEGERS & ABSOLUTE VALUE!
HOW DOES A 'SMART CANTEEN' WORK? LET'S FIND OUT!**

- Which method is faster — line or pre-order?
- Do all students wait the same time?
- Why do students not like waiting in a long line?



- Which one is faster?
- Which one has longer waiting time?
- Is the difference big or small?
- Which method should the school choose?



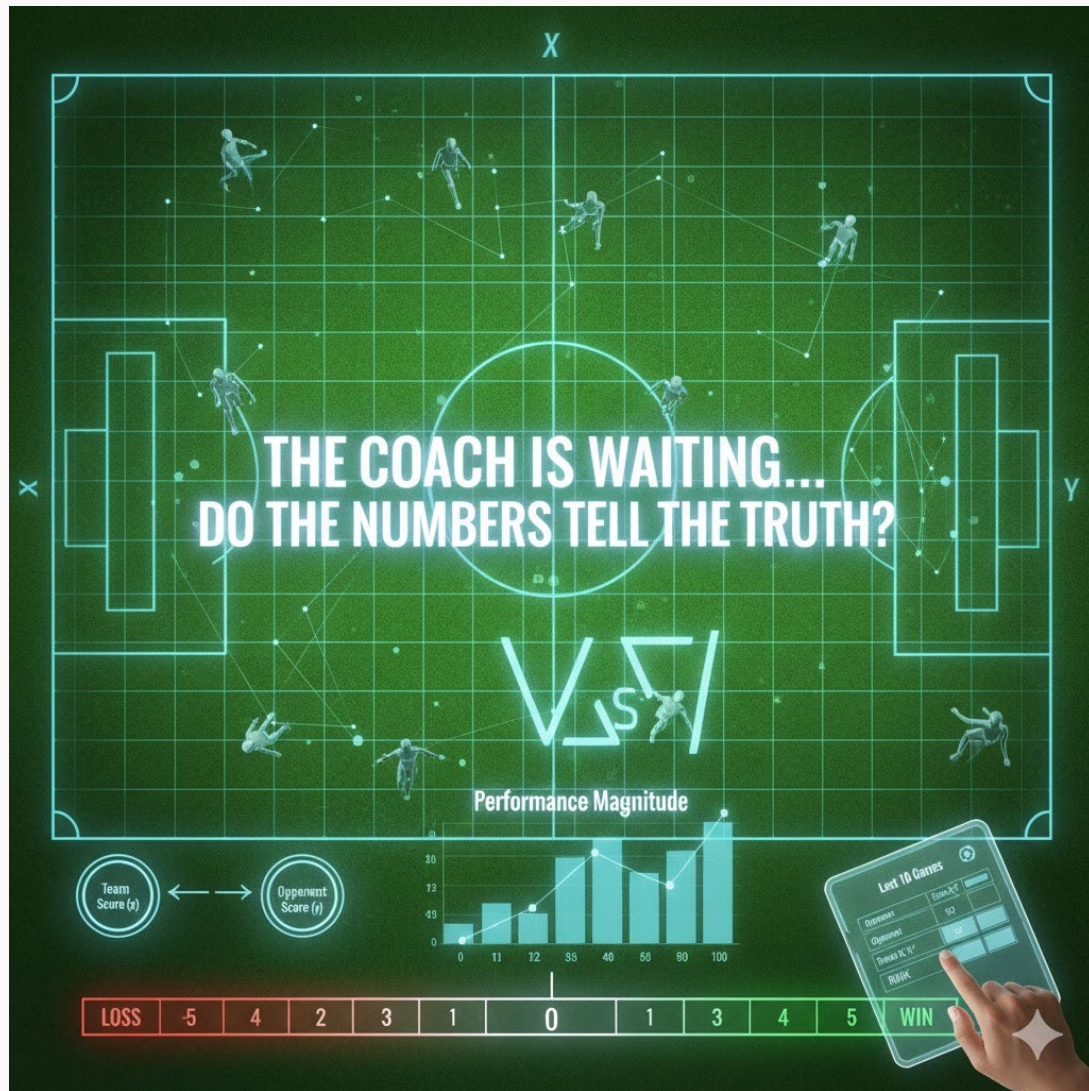
Scenario 4: Game Data Analysis Lab

In the UAE, we care a lot about our national teams and clubs. After a tough game, many people share opinions, but numbers tell the real story. Analysts use game data to help coaches improve. Your job is to be a sports analyst and use numbers to give helpful advice to your favorite national team or club.

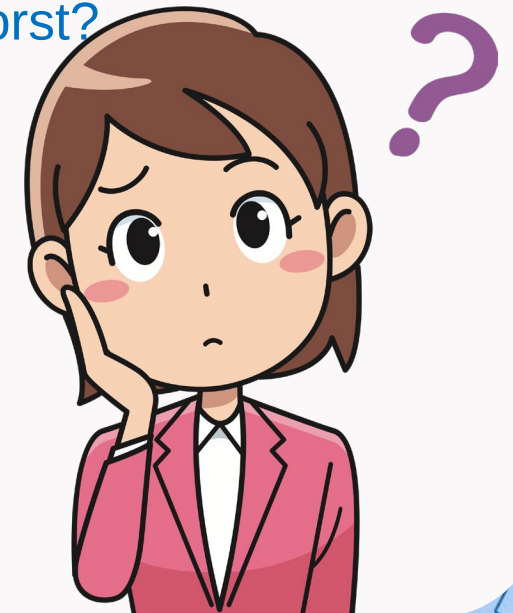
Choose any national sport you like (football, basketball, handball, etc.), pick one team, and gather data from its last ten games. For each game, record your team's score and the opponent's score (points or goals, depending on the sport), then compute the Score Difference (SD). Plot each game as a point on a coordinate grid (x = your team's score, y = opponent's score). Also, place each SD on a number line using integers to represent the win, the loss, and the draw. Use absolute value to compare the size of wins and losses, and order the ten games from best to worst by SD.

Finally, explain what your order of games tells the team to do next (practice focus, lineup, or tactics). Also, how analyzing the games helped you understand the team's performance better. What did you notice that you might miss without the data?

Optional: Students can be more creative and



- Do you think your team wins more games or loses more games? Why?
- Which game do you think had the biggest score difference?
- Did the team win this game or lose?
- Is the SD big or small?
- Which game is the best?
- Which game is the worst?



Student Name: _____

Grade and Class: _____

Team Name: _____

Team Members: _____

Scenario Title: _____

2025 - 2026

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Week 1

Understand

1

What is my goal?

My goal is to work with my team to choose a scenario about a real-life problem, learn about the people it affects, and understand their needs by collecting helpful information from different sources.

What will I do?

- I will help my team choose a real-life problem to solve.
- I will ask questions to understand the people and their needs.
- I will look carefully for helpful information from different sources.
- I will discuss what I find with my team to understand the problem better.

In this project, I will do two types of work

Individual Work:



Things I do on my own.

Teamwork:



Things I do together with
my classmates.



Understand

Before we begin this substage, our teacher showed us different scenarios about real-life problems.

My team talked about each scenario and chose the one we want to work on

Scenario Title: _____



Let's get started and make an impact!

Scenario Text:

My team and I chose this scenario for our project. I have added it below.



Read, Think, and Collect!

Individual



I will make sure in the "Understand" step to:

- 1 Ask clear questions to help understand the problem better.
- 2 Identify the mathematical elements in the problem and how they are.
- 3 Collect accurate and useful information using different methods and sources.
- 4 Help my team members when I can.

My notes

What I already know

.....

What I don't understand yet

.....

What I need to learn more about

.....

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Individual



My Questions

Four horizontal dashed lines for writing questions.

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Collecting Information

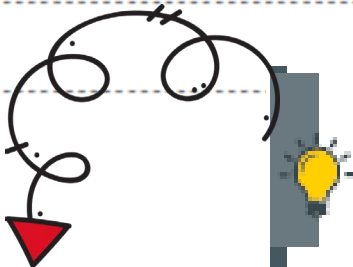
I can choose different ways (methods) to collect information to answer my questions. Here are some examples:

Method	How I will use it
Research	☐ I will look for information from websites, books, magazines, or posters to learn more about the scenario.
Interview	☐ I will ask people questions to find out more information about the scenario.
Observation	☐ I will watch carefully and take notes to understand the scenario better.

As a team, we will now talk about our notes and questions.

- the questions we want to research
- who will find the information
- how each teammate collect it.

- the questions we want to research
- who will find the information
- how each teammate collect it.

Topic	What we agreed on
Our main questions.	 Example: Sara
How and who will collect the data (Research, interview, Observation etc.)	

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Example: Sara will do interviews, and Fatma will research online.



Collecting Information

I will collect the information using the method my team chose for me.

I will write my notes or interview answers below.



If I don't have enough time to collect information during the lesson, I will continue my research at home.

I will write my notes and the information I collected here:

I will write where I found the information (references/sources):

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