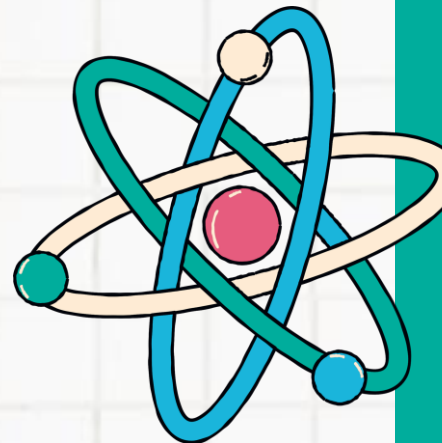
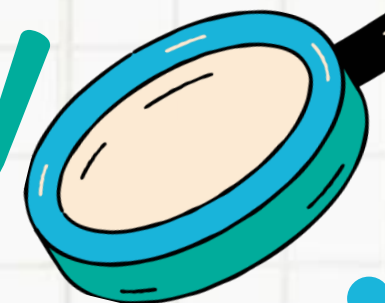
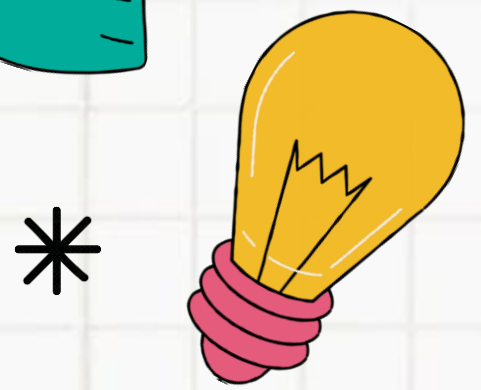
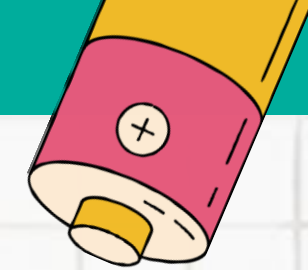
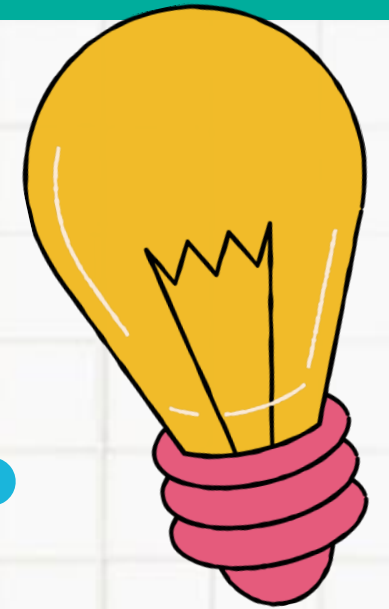
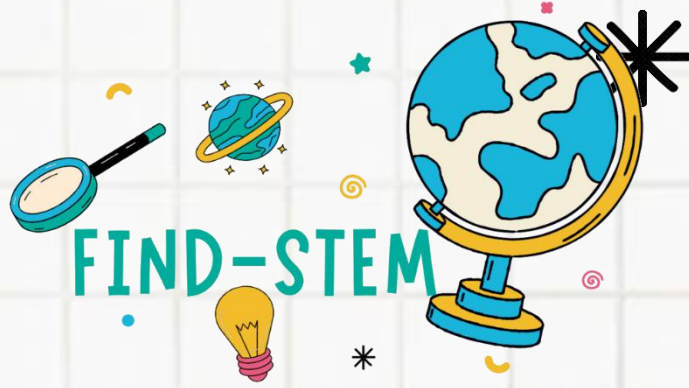


# MODULE 4:

# Digital Literacy and Technology

# Integration





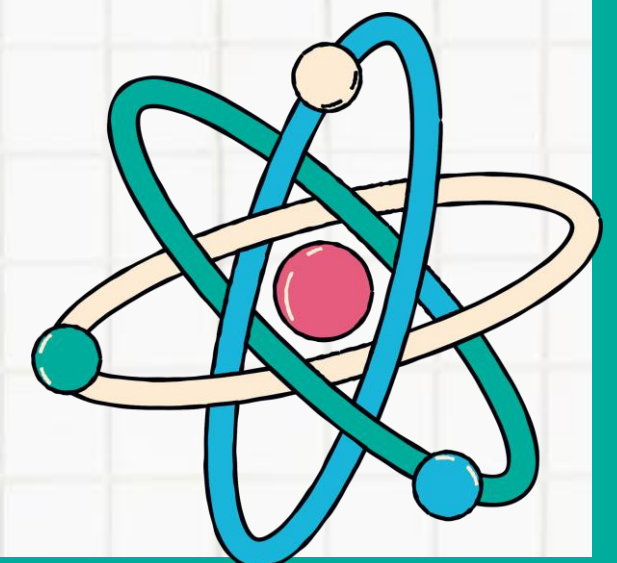
# INTRODUCTION (1)

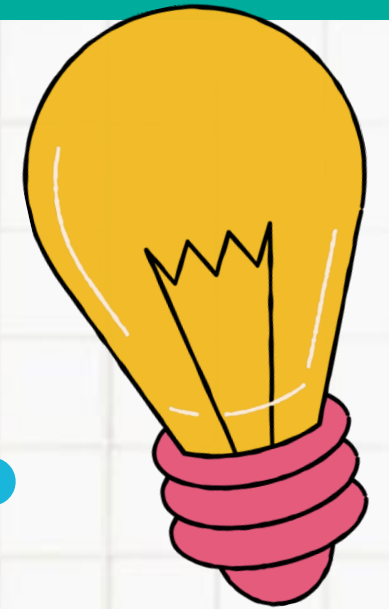
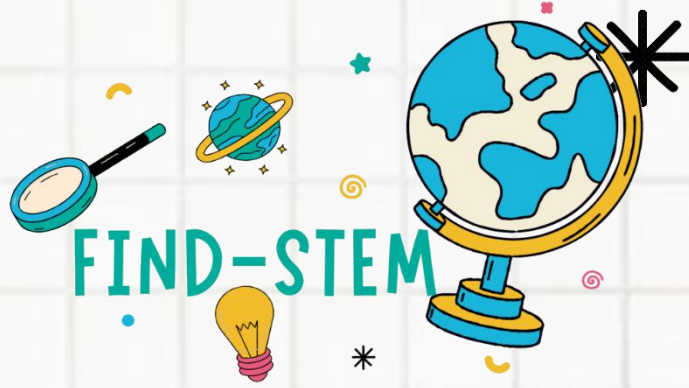
Digital literacy refers to the ability to use digital tools and technologies confidently, responsibly, and effectively. It goes beyond basic computer skills and includes:

❖ Key Components:

- Navigating digital environments (websites, apps, devices)
- Using software tools (word processors, spreadsheets, presentation tools)
- Evaluating digital content for credibility and accuracy
- Understanding online safety and digital citizenship
- Communicating and collaborating using digital platforms

❖ In a school setting: A digitally literate student can create, share, evaluate, and interact with digital content in meaningful ways, across subjects.





# INTRODUCTION (2)

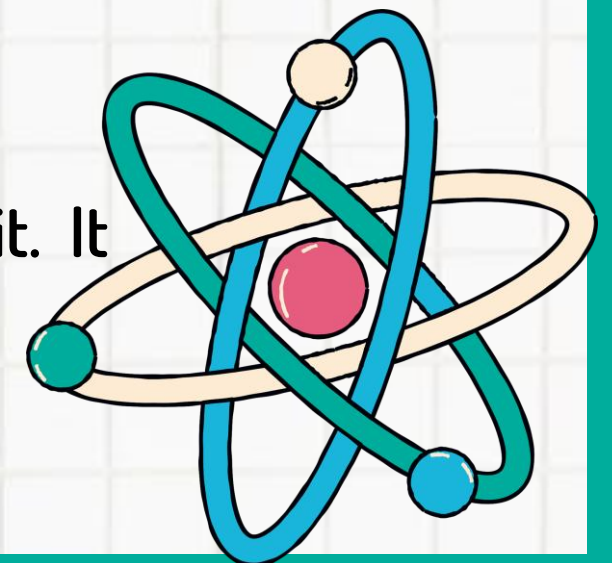
Technology integration is the process of purposefully embedding digital tools and technologies into teaching and learning to improve student outcomes.

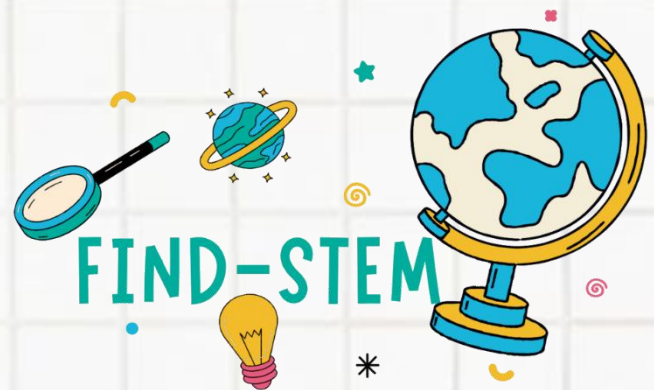
❖ Key Components:

- Enhancing instruction using tech (e.g., simulations, videos, digital labs)
- Facilitating active learning (e.g., coding apps, online quizzes, robotics)
- Personalizing learning (adaptive software, learning management systems)
- Engaging students through interactive tools (e.g., virtual reality, games)

❖ In a classroom:

When well-integrated, technology amplifies learning rather than distracts from it. It becomes a tool to explore, create, and solve problems—not just to consume content.

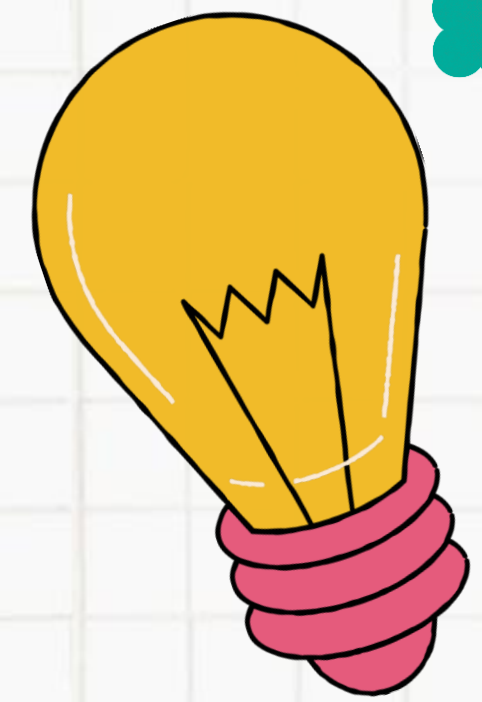




# KEY TOPICS

## 01

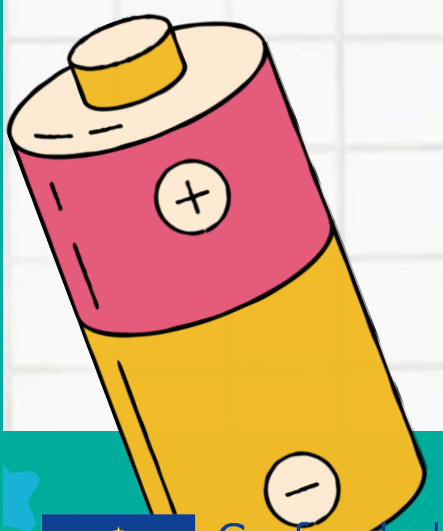
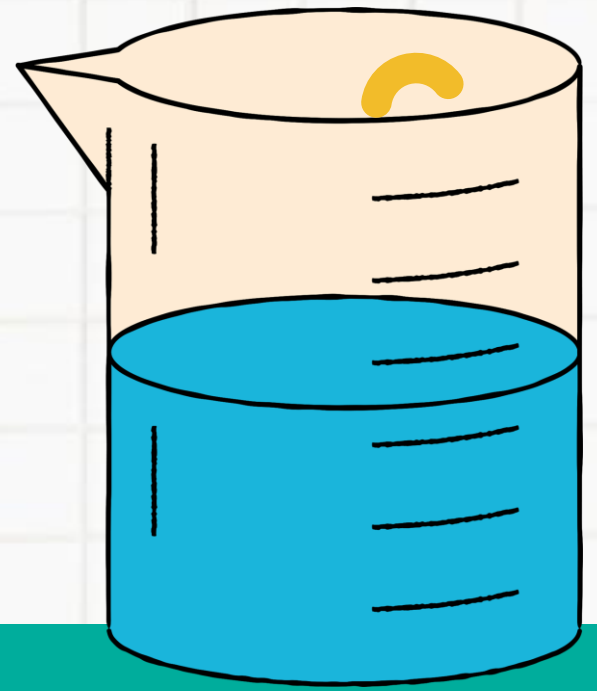
## 02

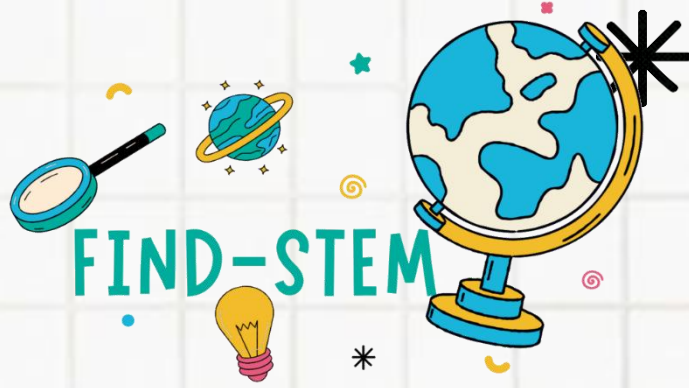


01  
Digital literacy

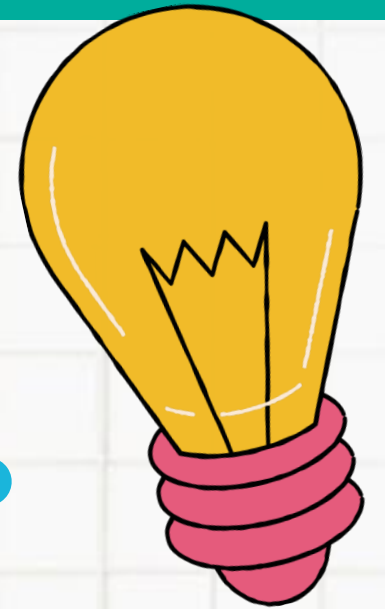
Technology integration

\* 03  
Real-world problem-solving

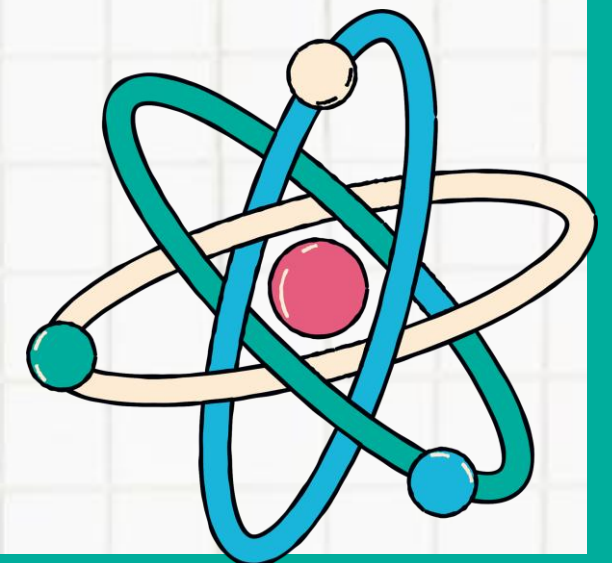
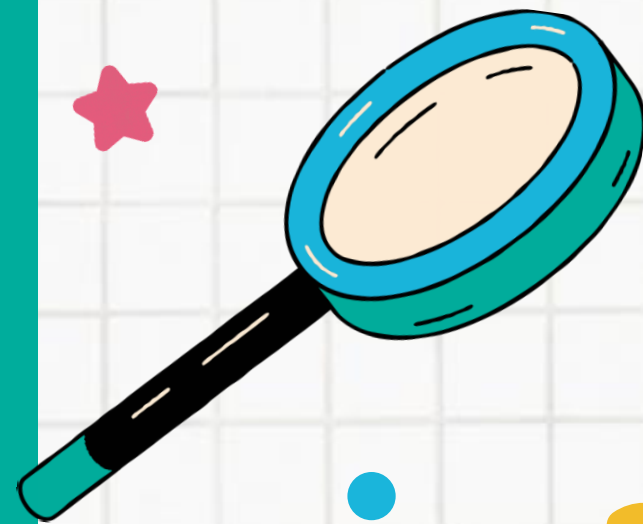


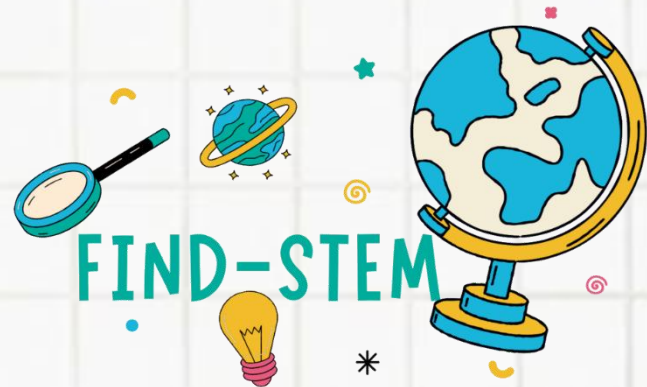


# GENERAL LEARNING OUTCOMES



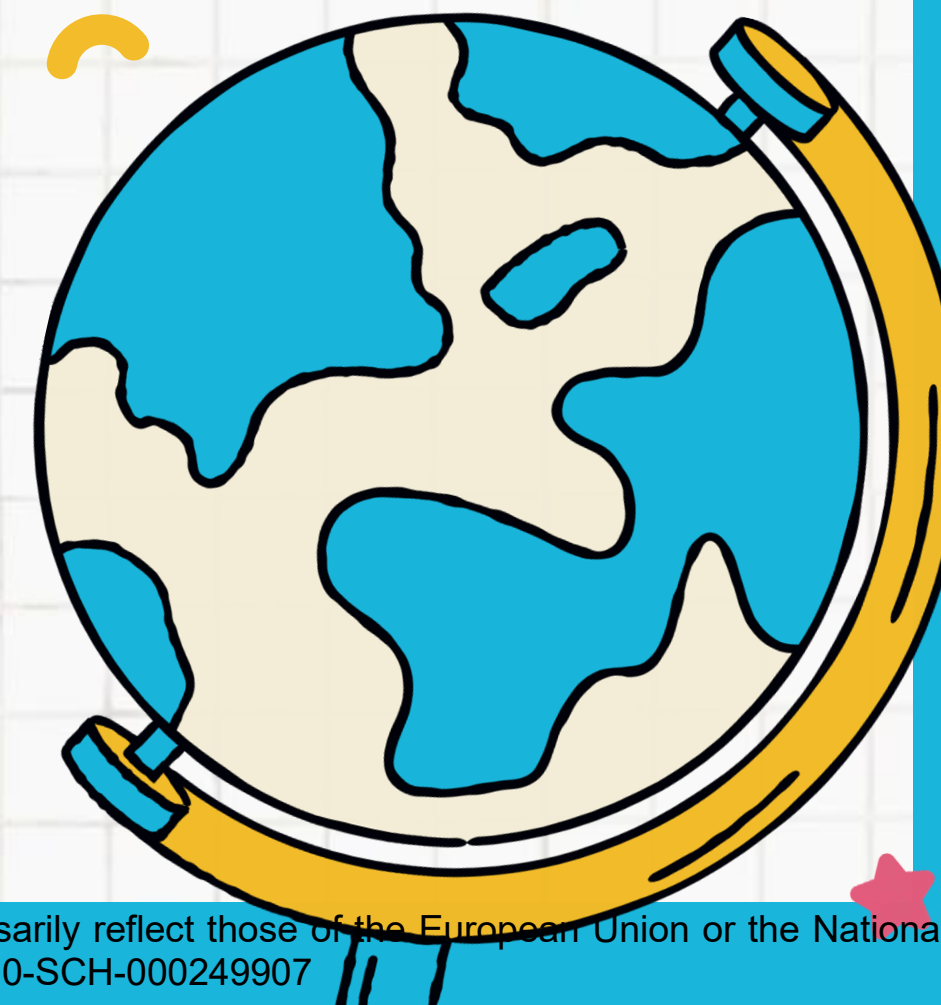
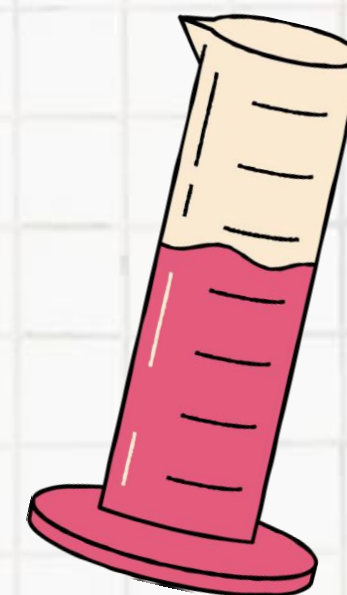
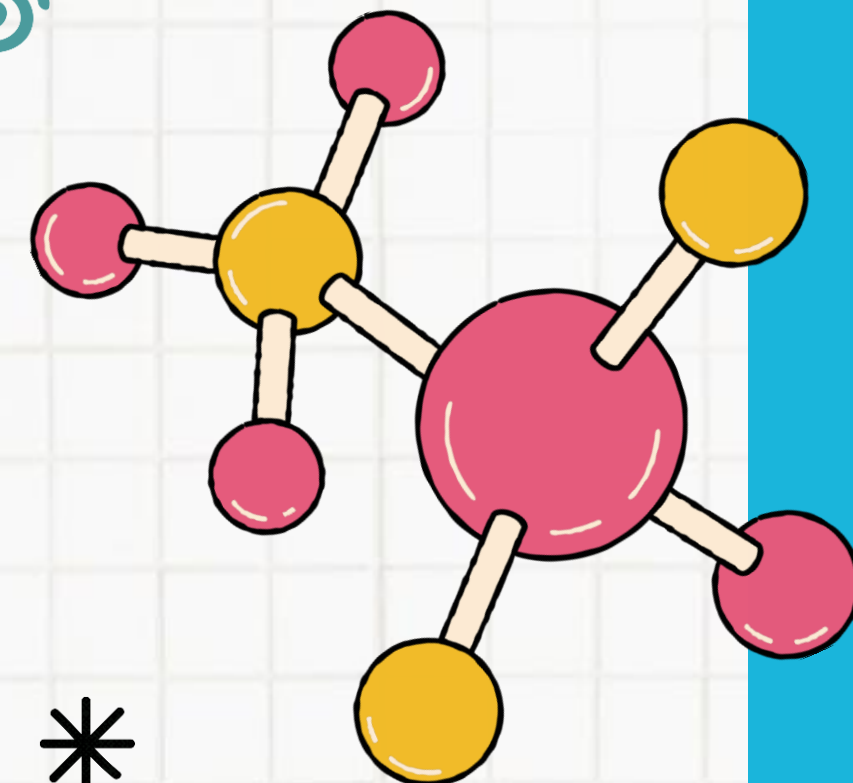
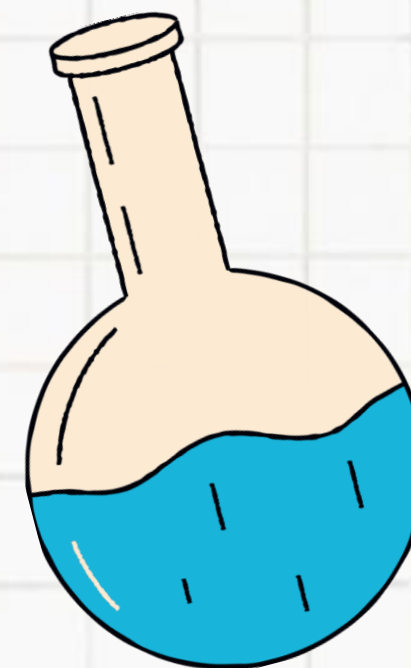
- Learn how to design STEM project that promotes teamwork and real-world application
- Understand how to practice structuring lessons using guiding questions to promote critical thinking
- Explore hands-on activities to engage different sensory and cognitive styles

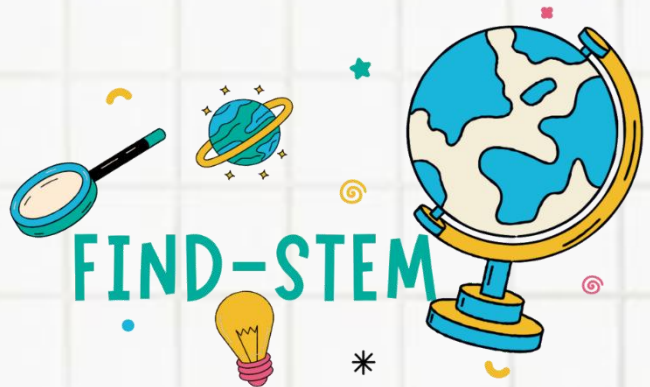




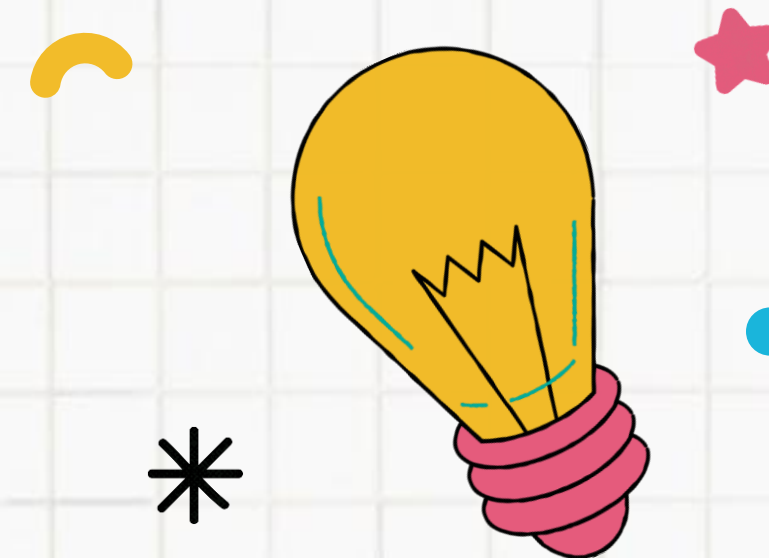
# ACTIVITY 1

Create a Weather Report Using a Digital Presentation Tool





# OBJECTIVES



1

Understand basic weather concepts (temperature, precipitation, wind).

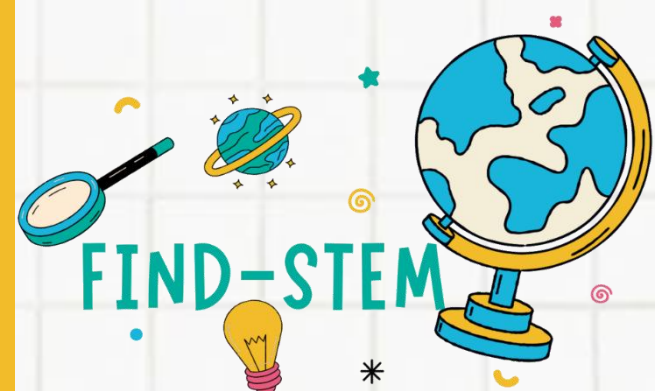
2

Learn to gather and interpret simple weather data.

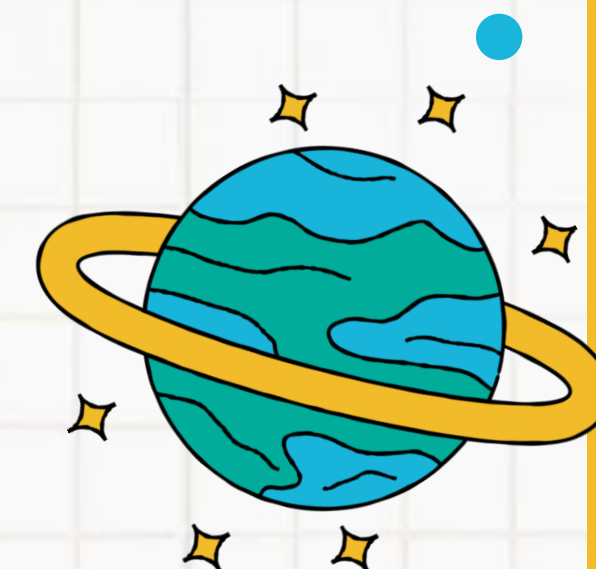
3

Use a digital presentation tool (e.g., Google Slides, PowerPoint) to present findings





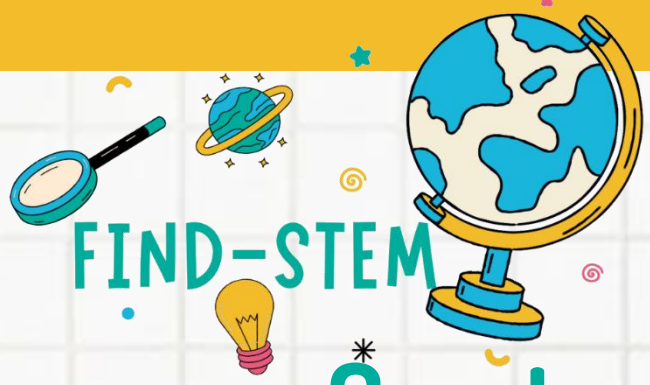
# Create a Weather Report Using a Digital Presentation Tool



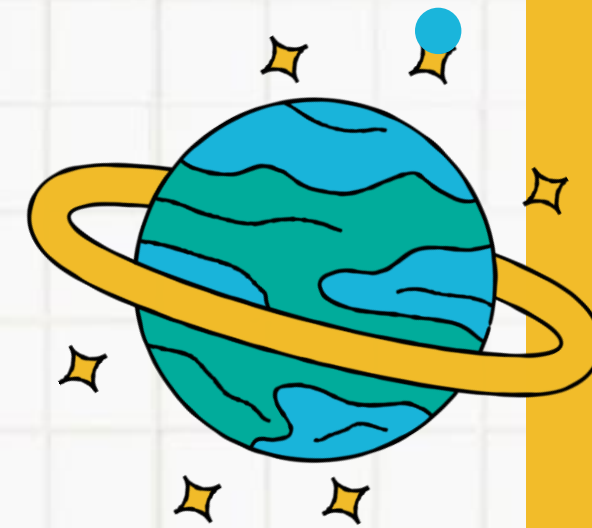
This activity helps teachers in several meaningful ways by supporting both pedagogical goals and technology integration in STEM education, such as: supports cross-curricular teaching; builds student digital literacy; promotes collaboration and communication by using different presentation tools.

- Begin with a short interactive discussion: “What is weather?”
- Show a sample weather report from TV or YouTube (2–3 mins clip).
- Explain today's task: "You will create a digital weather report!"





# Create a Weather Report Using a Digital Presentation Tool

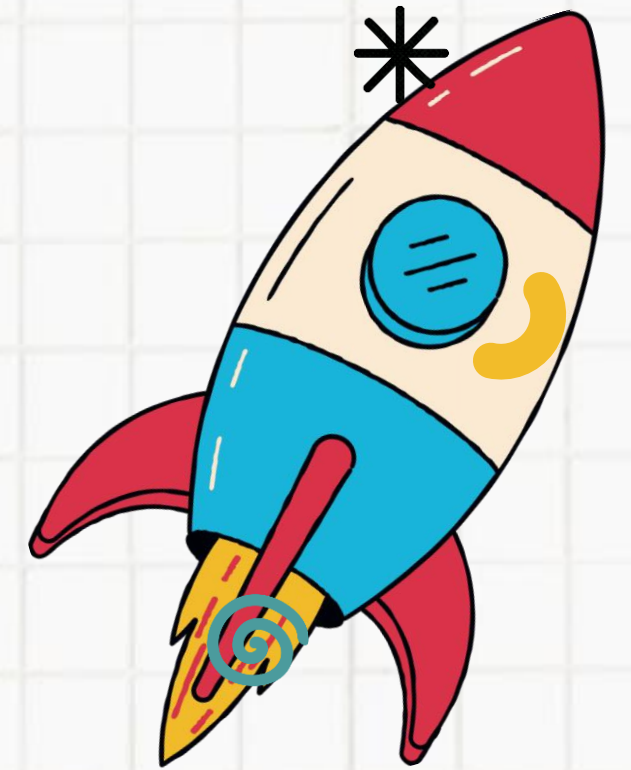


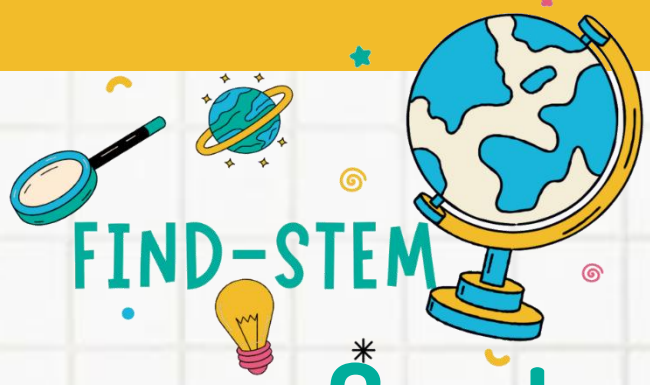
Divide teachers into groups of 3-4.

Guide them to a child-friendly weather website (e.g., <https://weather.com>, BBC Weather).

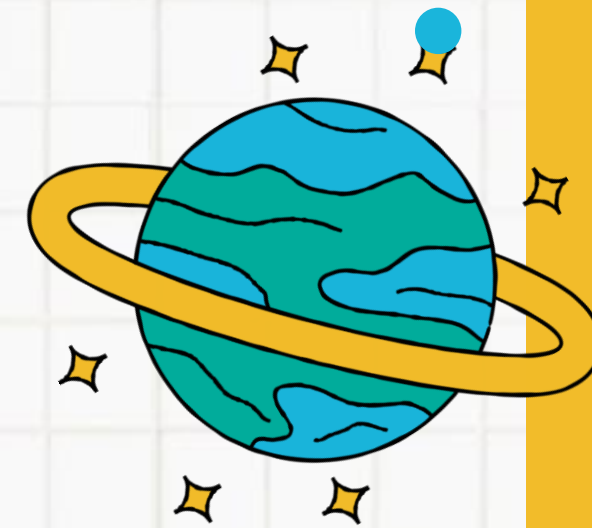
Each group records:

- o Today's temperature and condition (e.g., sunny, cloudy)
- o Forecast for tomorrow
- o Suggestions on what to wear





# Create a Weather Report Using a Digital Presentation Tool

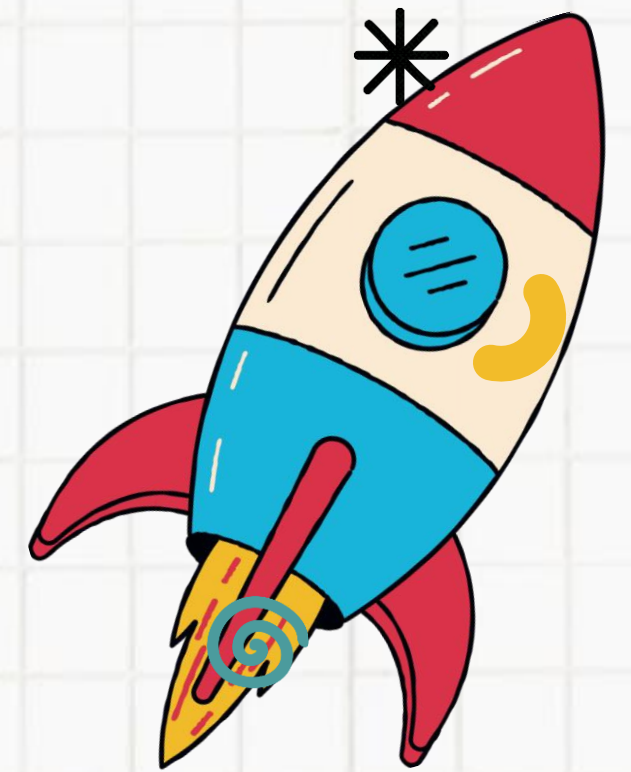


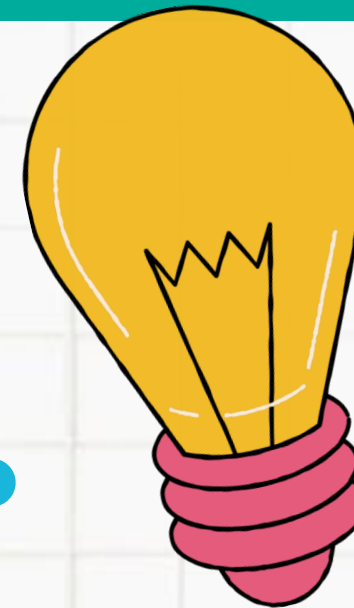
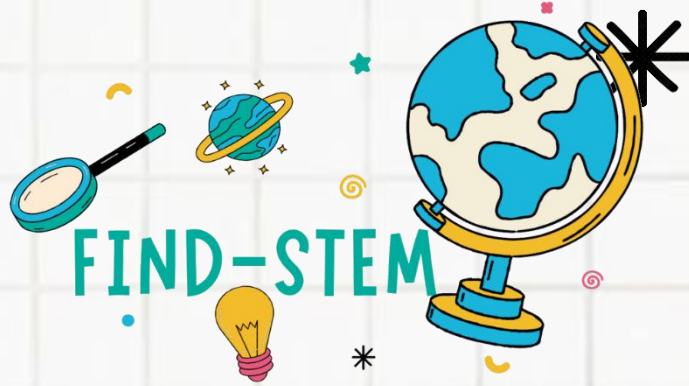
Introduce Google Slides or PowerPoint basics.

Slide guide:

- o Slide 1: Title and today's weather
- o Slide 2: Tomorrow's forecast
- o Slide 3: Advice: "What should you wear?"

Teachers insert icons/images (e.g., sun, rain), text, and voice if possible

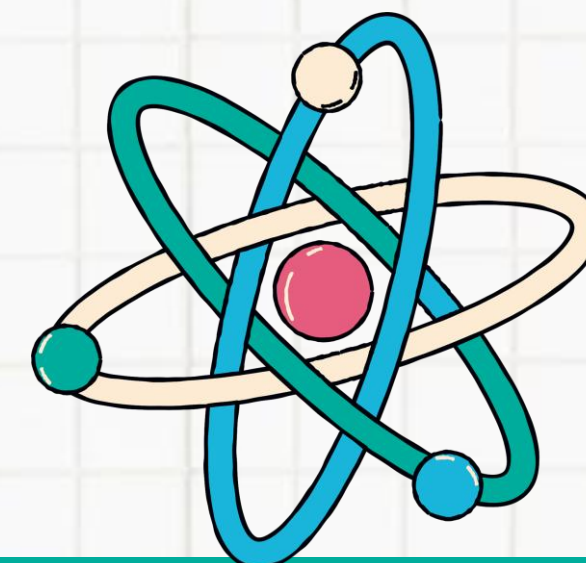


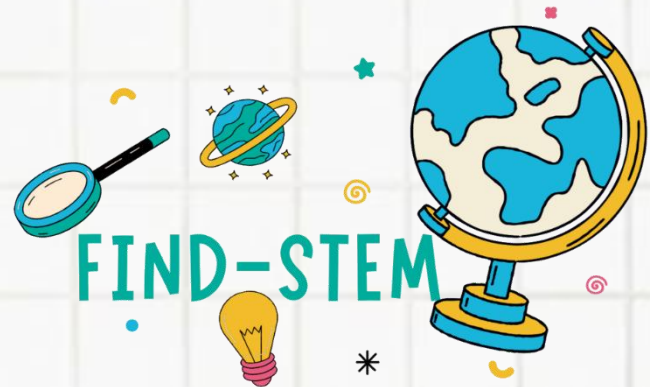


# Additional Resources

Canva: <https://www.canva.com/templates/s/weather/>

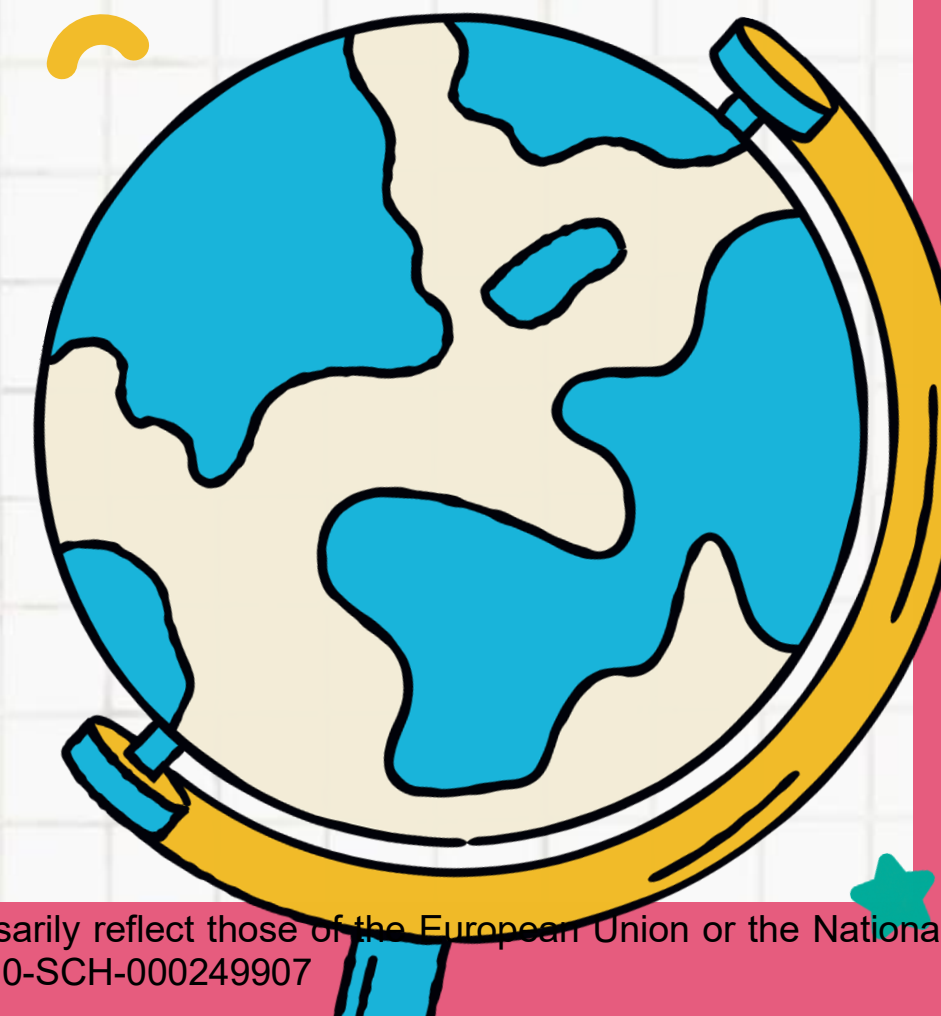
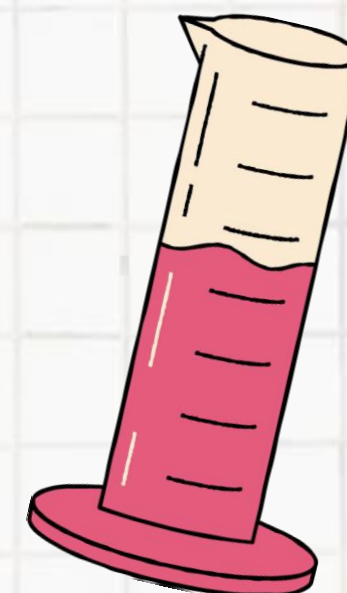
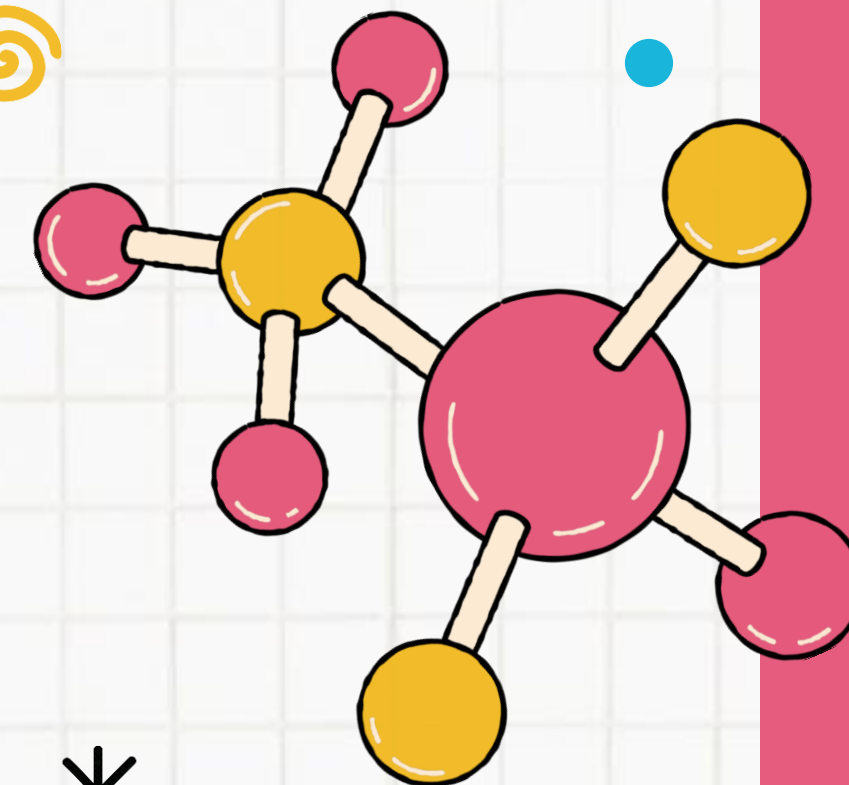
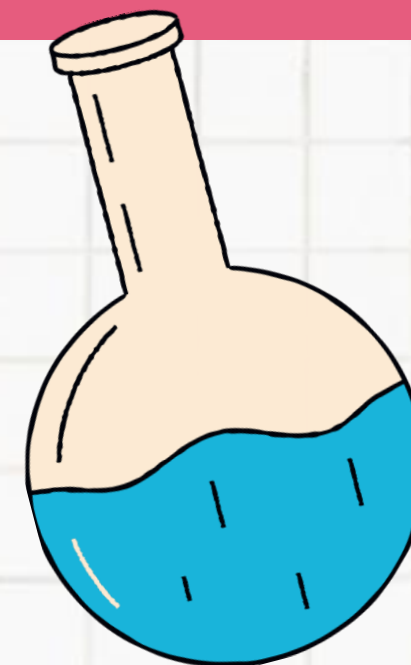
Slidesgo: <https://slidesgo.com/theme/weather-forecast-infographics>

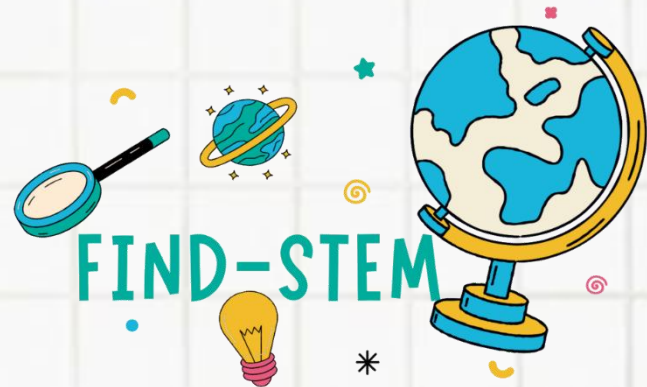




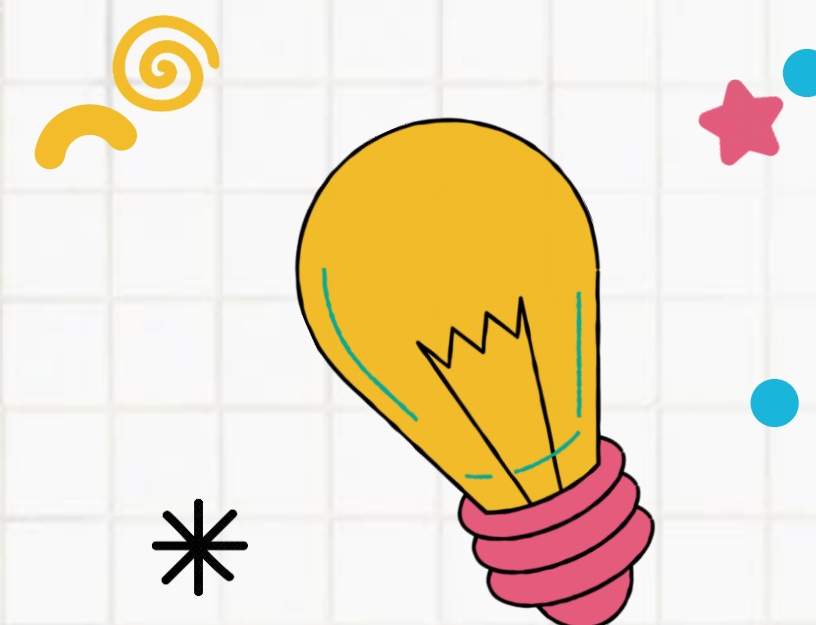
# ACTIVITY 2

**Build a Virtual Bridge Using Digital Tools**





# OBJECTIVES



1

Understand forces (load, tension, compression).

3

Apply math concepts like symmetry and measurement.

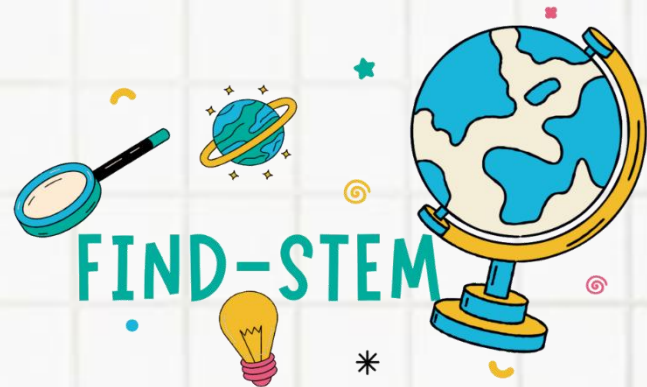
2

Explore engineering design through trial and error.

4

Use simulation tools to model and test structures.

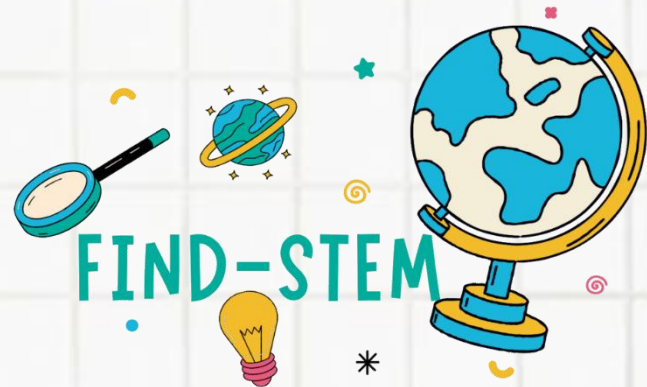




# Build a Virtual Bridge Using Digital Tools

This activity provides powerful benefits for teachers by combining engineering principles, math application, and technology integration in a highly engaging and hands-on format, such as: integrates technology purposefully; supports problem-based and experiential learning; builds resilience and growth mindset.





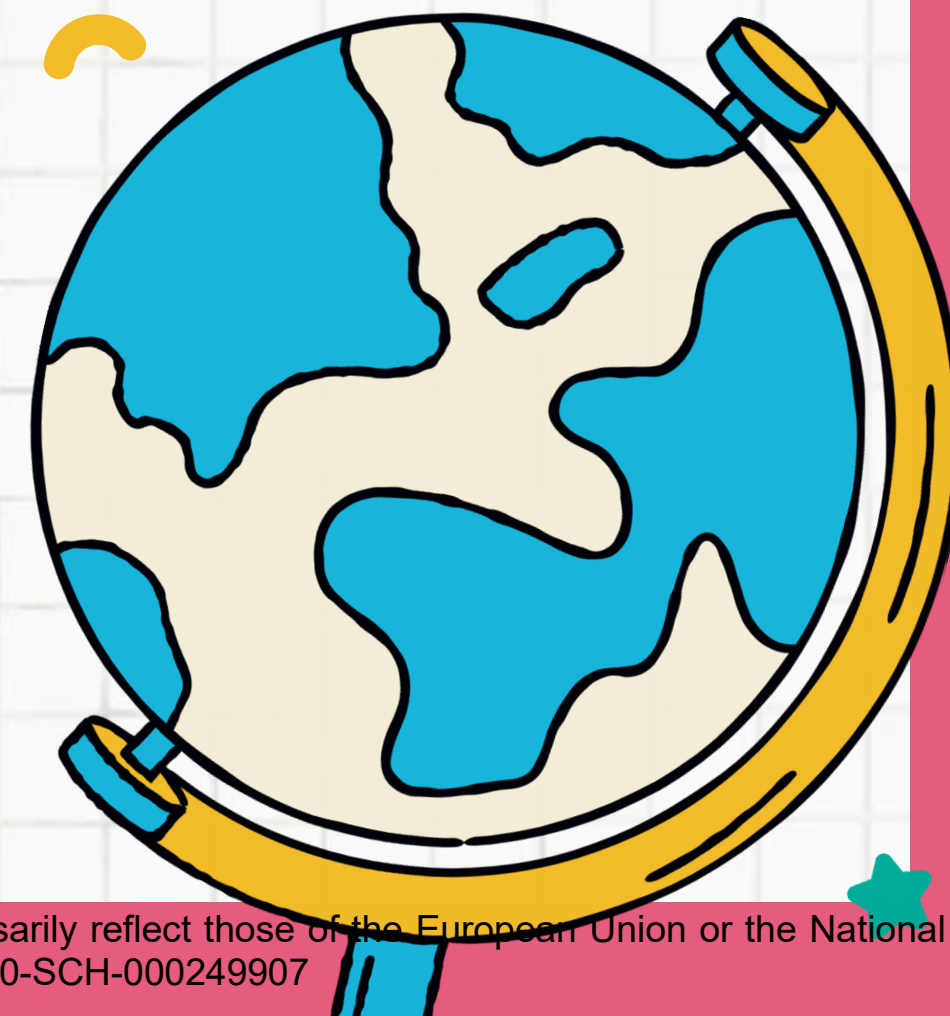
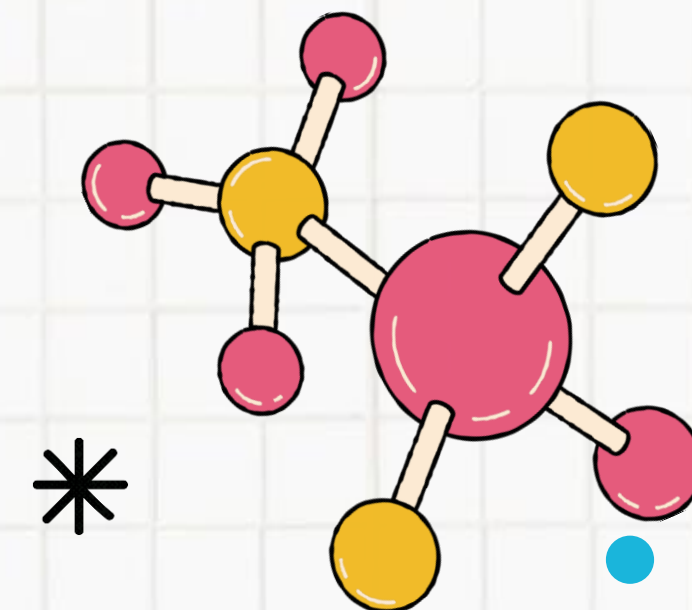
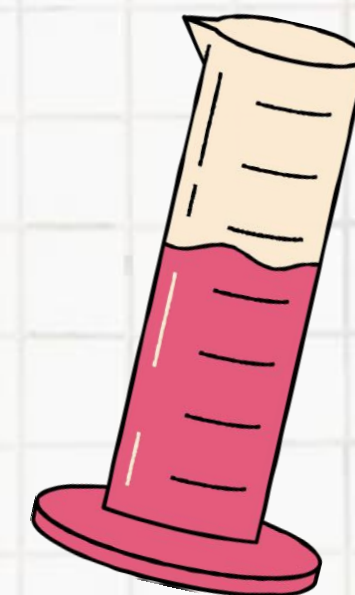
# Build a Virtual Bridge Using Digital Tools

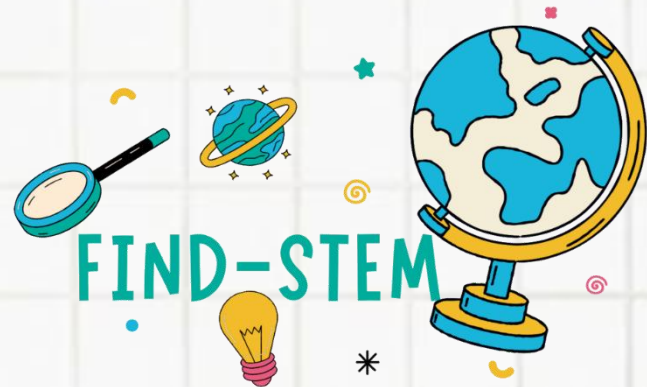
Ask: “What makes a bridge strong?” Show examples (suspension, arch, beam).

Play a video showing bridge failures vs. strong designs.

Introduce key concepts (tension, compression, load distribution).

Demonstrate building a bridge





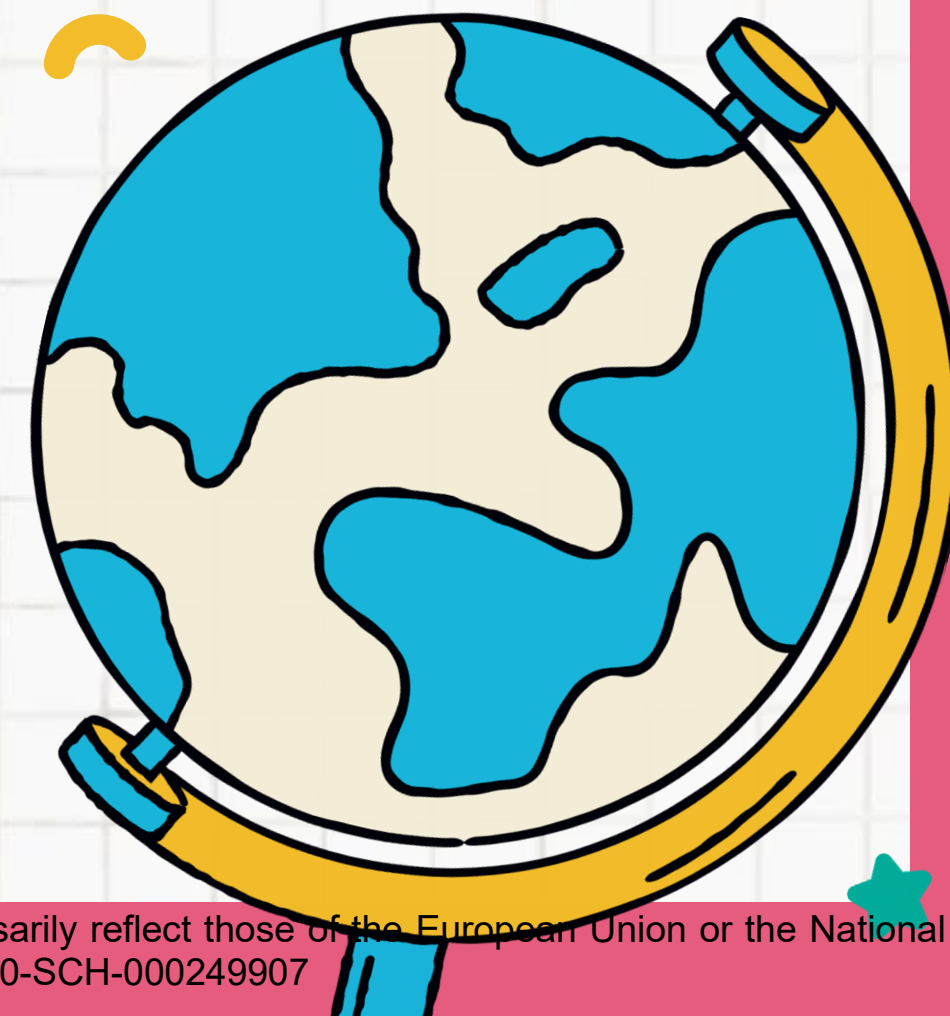
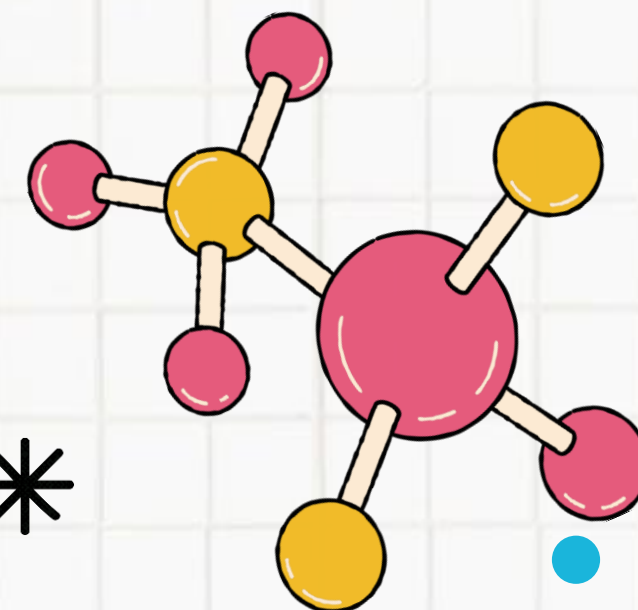
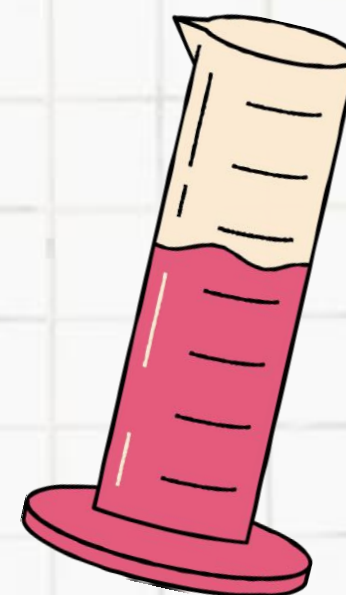
# Build a Virtual Bridge Using Digital Tools

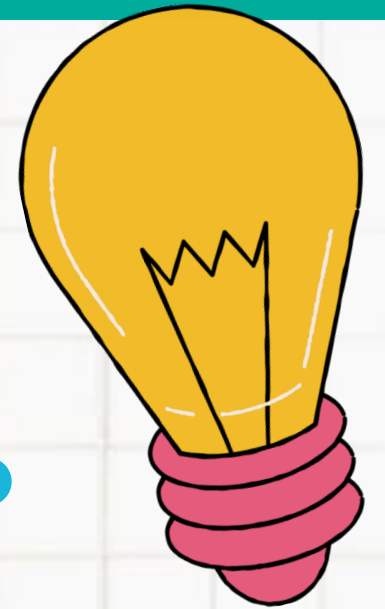
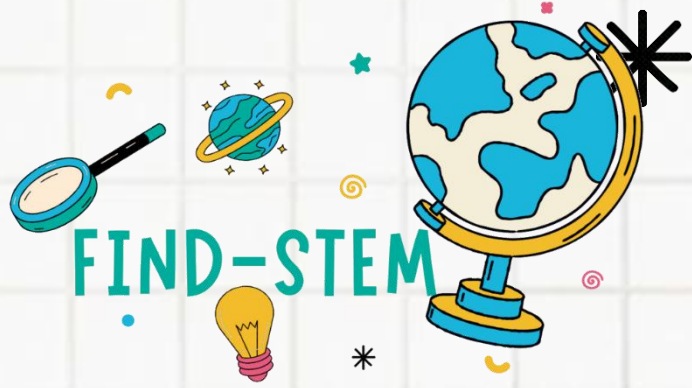
Goal: Build a virtual bridge that can:

Hold a car or truck without collapsing

Stay within budget (if using simulation with cost constraints)

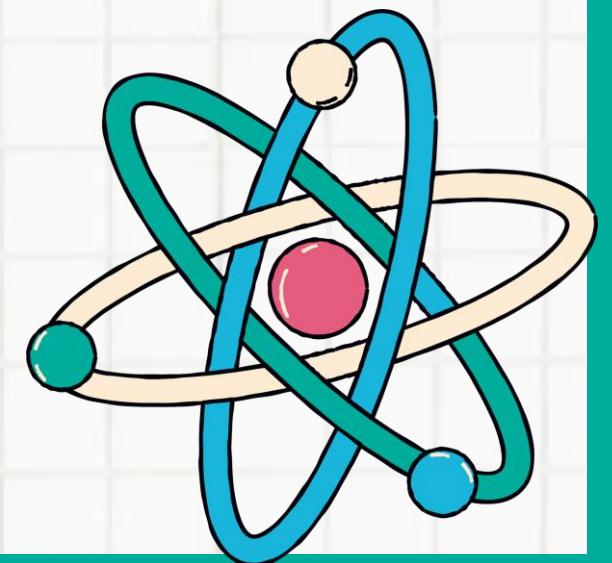
Use no more than X materials (e.g., 20 beams)

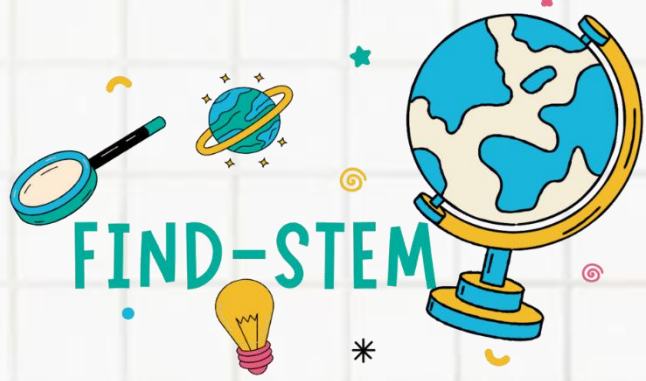




# Additional Resources

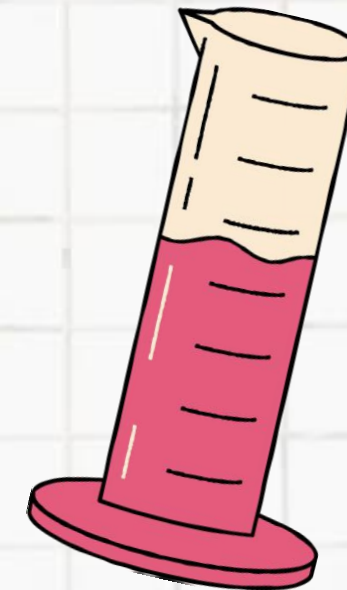
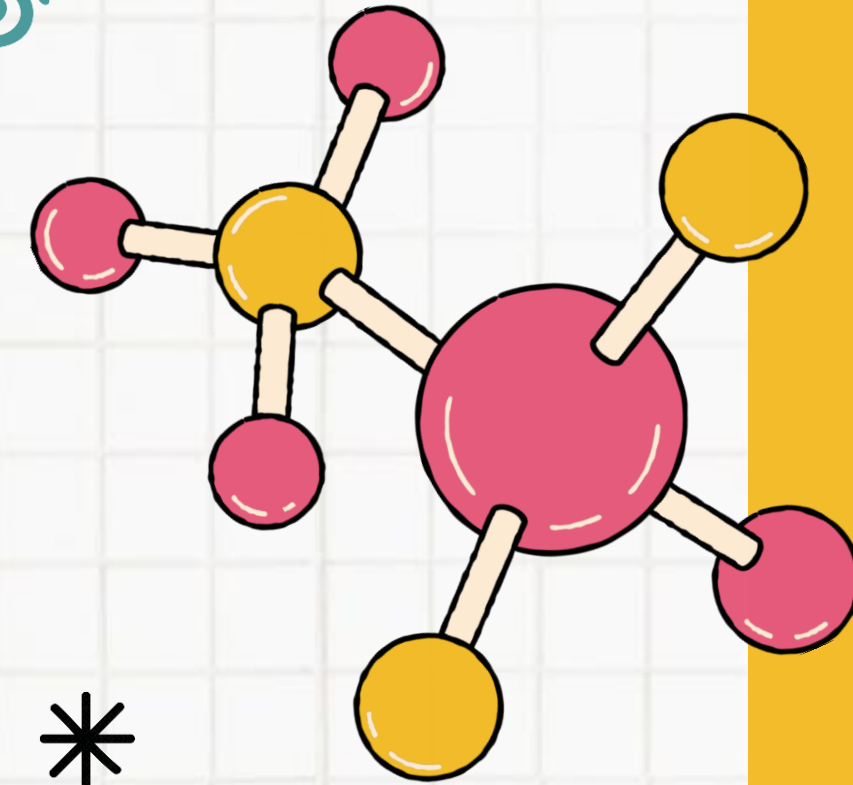
Interactive simulations: <https://phet.colorado.edu/en/simulations/magnet-and-compass/activities>

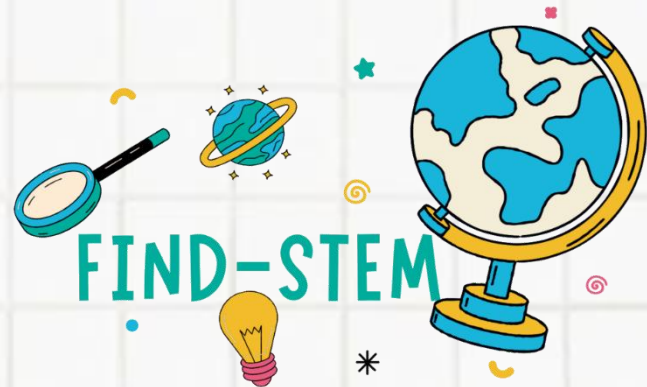




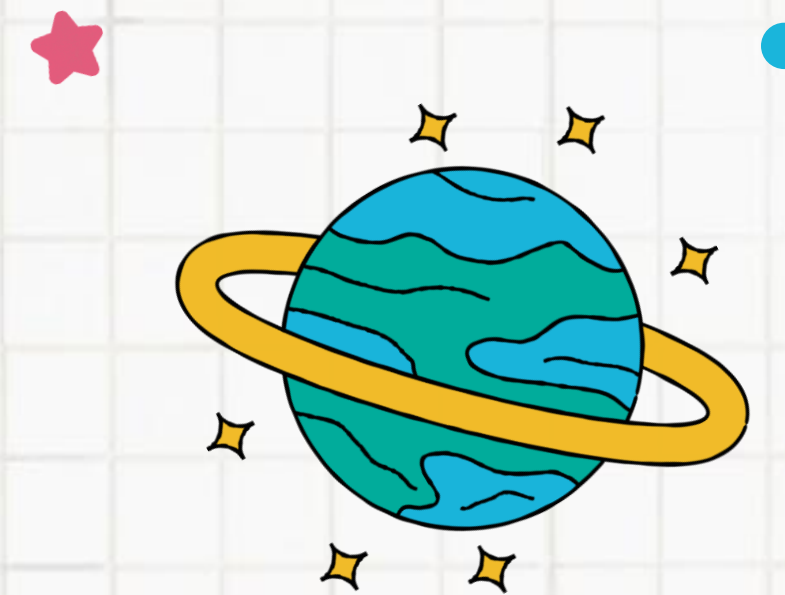
# ACTIVITY 3

**Code a Simple Animation About the Water Cycle**





# OBJECTIVES



1

Plan a storyboard representing these stages

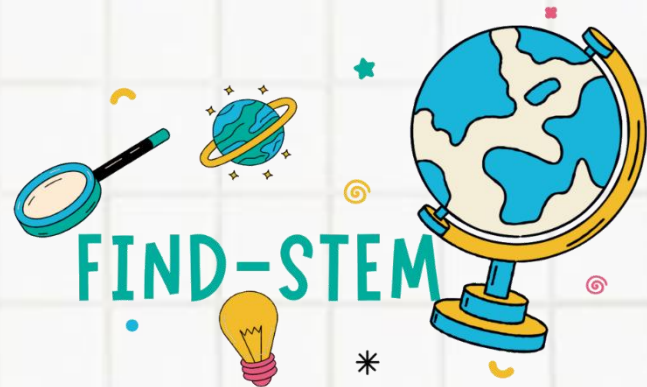
2

Use block-based programming (Scratch) to animate a scientific process.

3

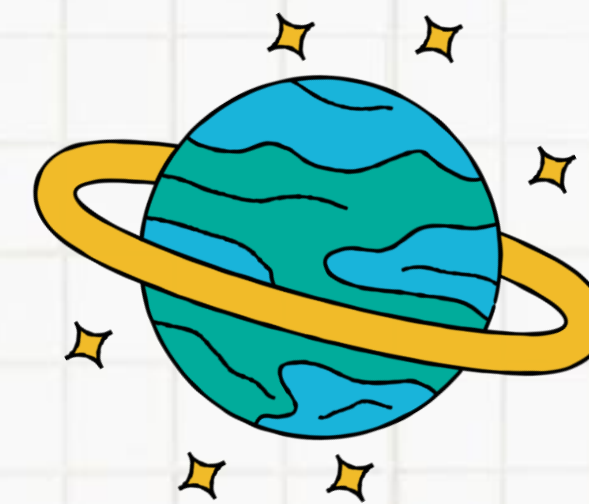
Demonstrate digital storytelling using sequencing and logic.

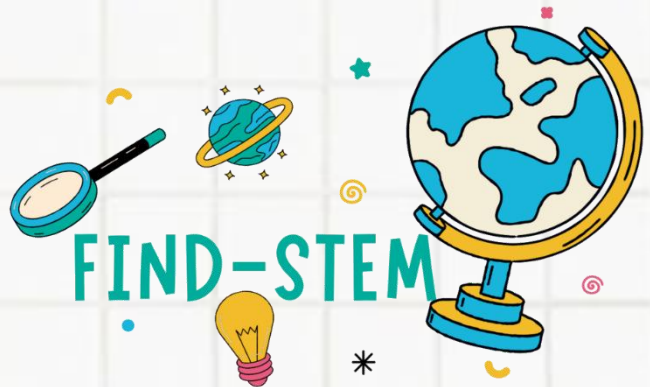




## Code a Simple Animation About the Water Cycle

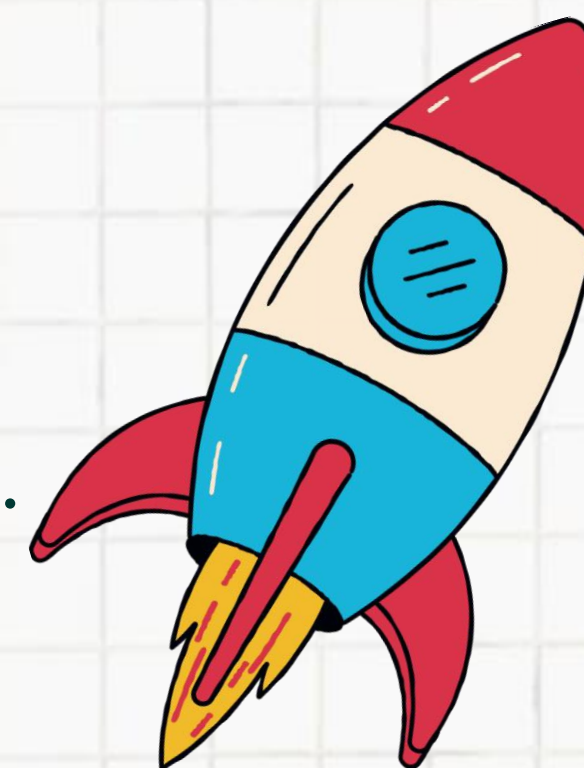
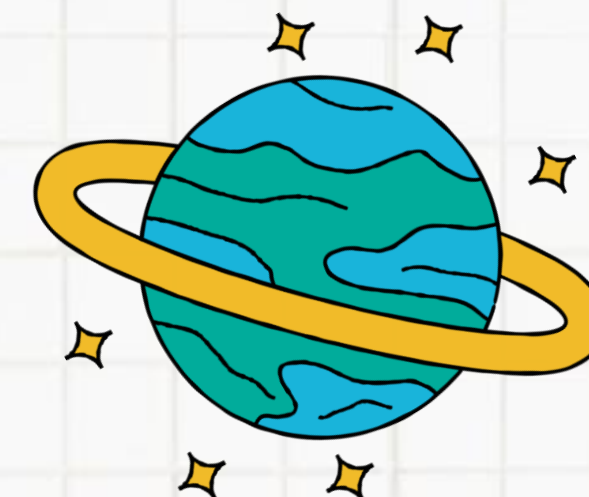
This activity empowers teachers to integrate science, technology, and creativity while fostering digital competence in students. It bridges science content with coding, makes abstract processes visual and interactive, builds digital literacy and coding confidence, encourages creativity and student voice.

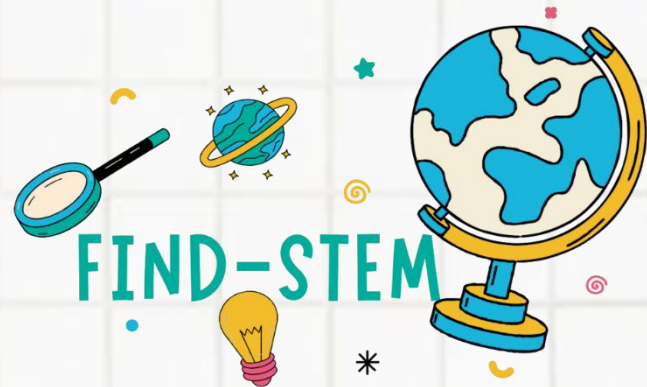




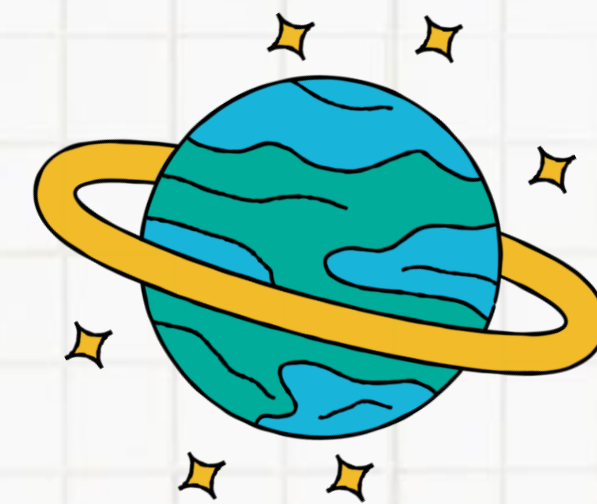
## Code a Simple Animation About the Water Cycle

- Use diagrams or an interactive animation to review evaporation, condensation, precipitation, and collection.
- Discuss what happens in each stage and how they repeat.
- Log into <https://scratch.mit.edu>
- Show a simple animation (1 sprite moving across 4 backgrounds)
- Walk through key blocks: motion, looks, events
- Draw or write 4 stages in sequence.
- Decide what the sprite (e.g., water droplet) will say/do at each stage.



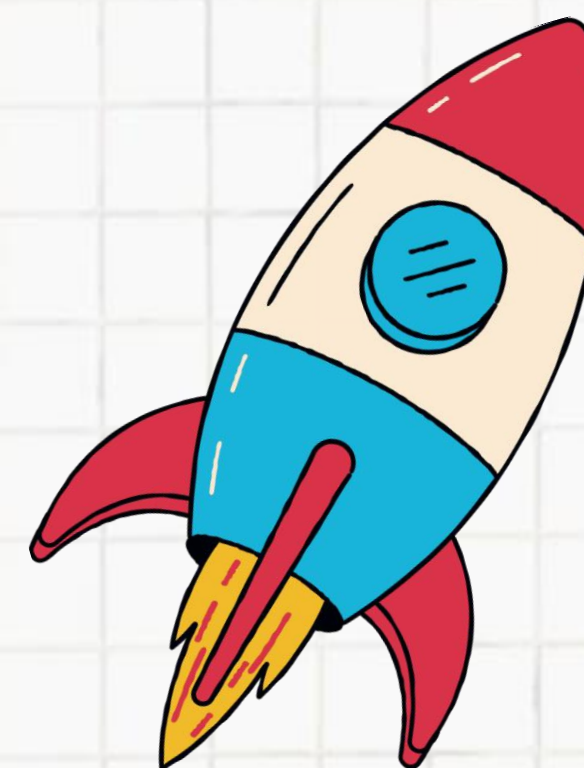


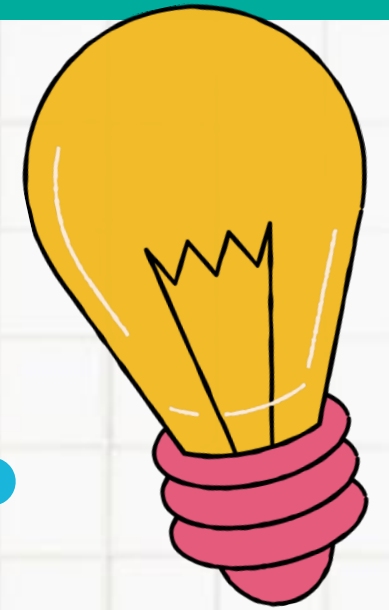
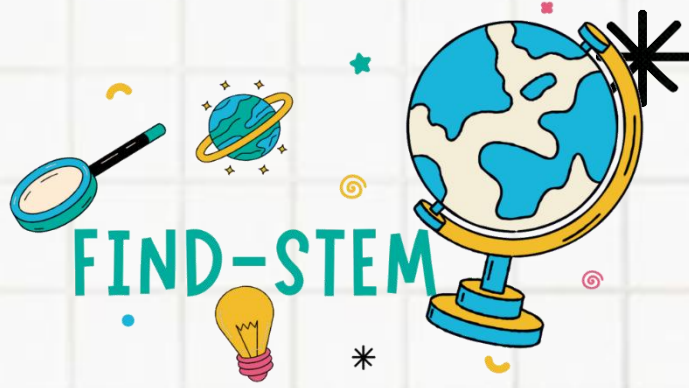
## Code a Simple Animation About the Water Cycle



Please build your water cycle animation with help:

- Use 4 backdrops (one per stage)
- Use sprites with speech bubbles
- Add transitions or sound effects



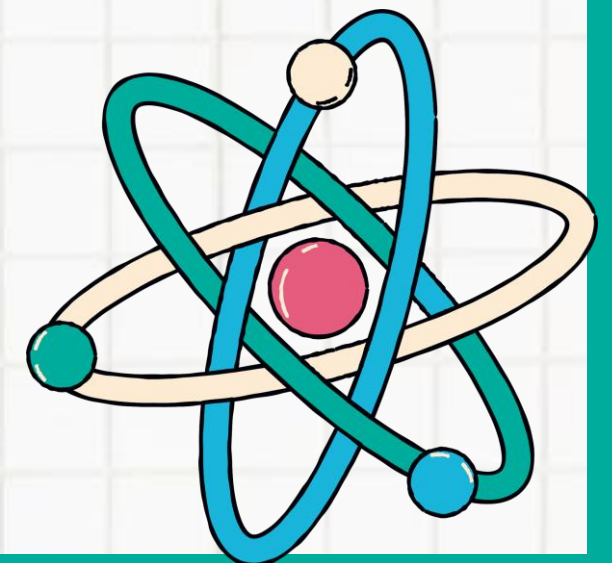


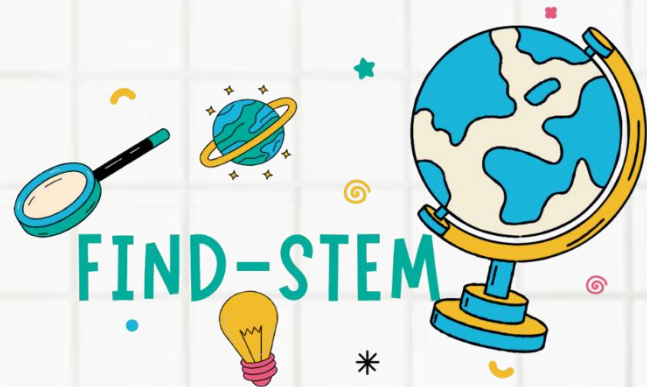
# Additional Resources

- Scratch:

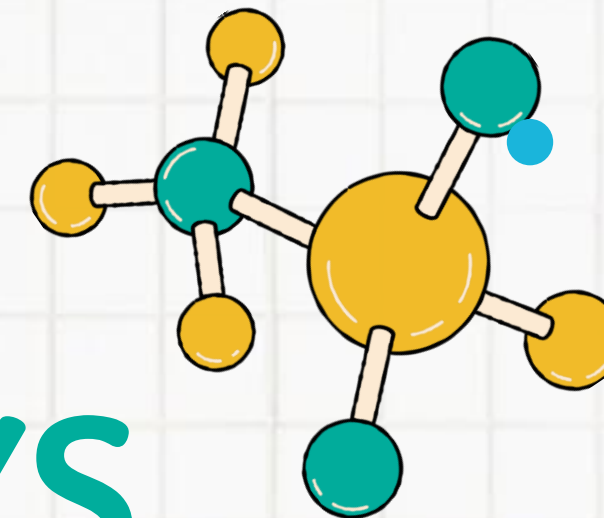
<https://scratch.mit.edu/projects/editor/?tutorial=getSt>

arted





# SUMMARY OF KEY TAKEAWAYS



1. Develops students' basic research, digital presentation, and public speaking skills

2. Encourages integration of science and digital storytelling;

3. Promotes computational thinking through storytelling





# THANK YOU!

Any questions? Don't hesitate to  
ask for our help



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