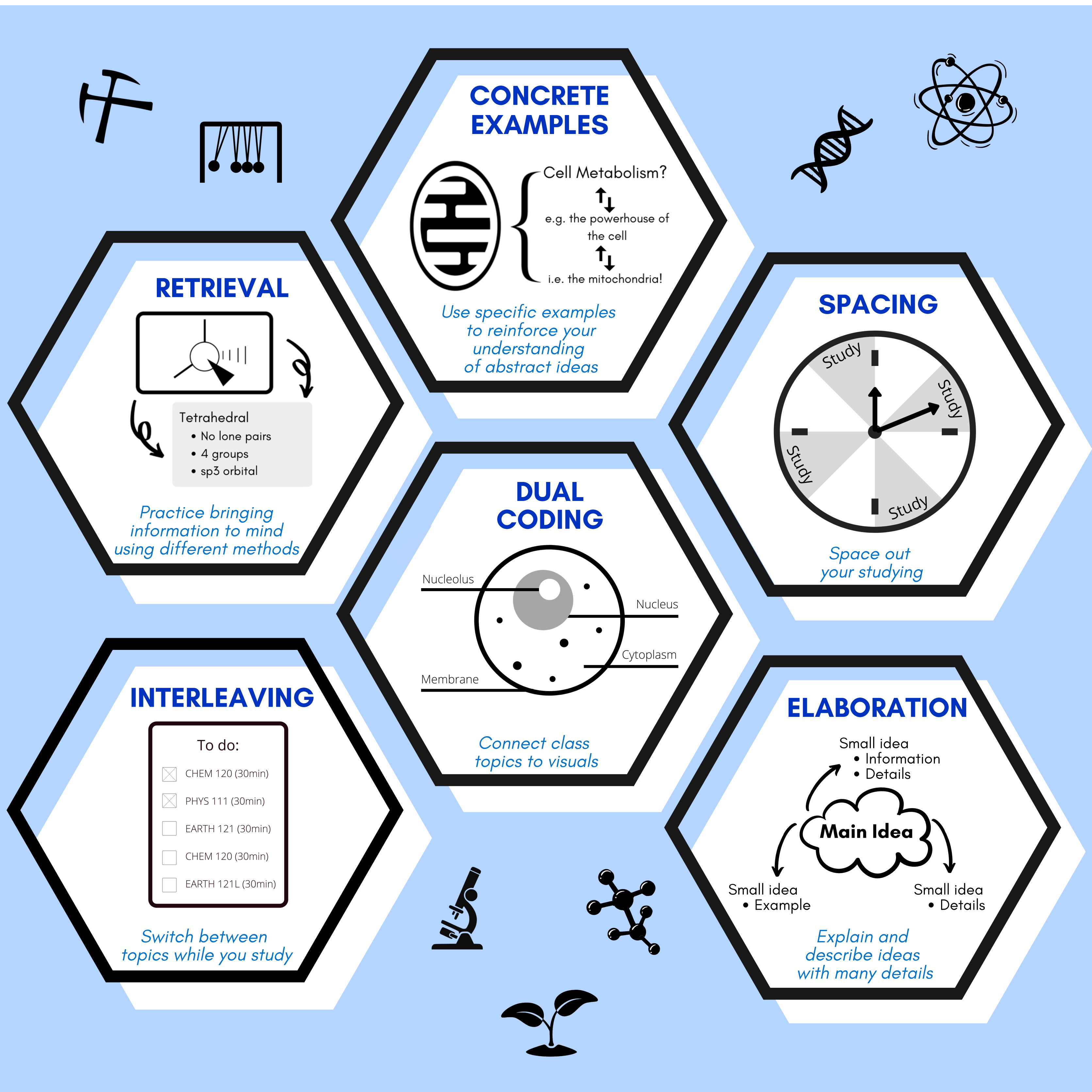


SIX STRATEGIES FOR EFFECTIVE LEARNING

STRATEGIES FOR SUCCESSFUL STUDYING IN AN ONLINE LEARNING ENVIRONMENT



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UNIVERSITY OF
WATERLOO

FACULTY
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Created by R. Somera, H. Biram, D. Karunathilake, R. Kumar, K. Yang, & C. Zhu.

STUDYING WITH INTERLEAVING

1

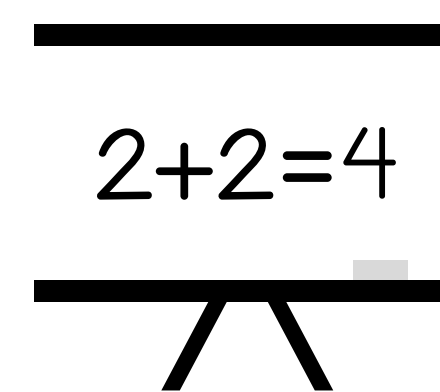
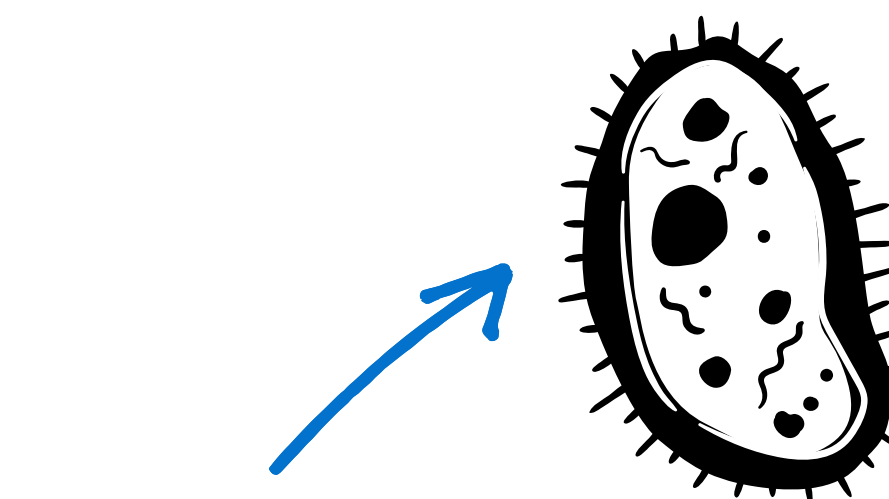
SWITCH BETWEEN TOPICS WHILE YOU STUDY

HOW TO DO IT

In one study session, switch topics. Don't stay on one idea!

The next time that you study this set of topics, go over them again in a different order.

BIOL 130
e.g. intracellular compartments



CHEM 120
e.g. VSEPR theory

MATH 127
e.g. differentiation rules

Find connections between the different ideas/concepts as you switch between them.

AVOID

Switching between ideas too fast!

Understand a topic before you move on.

If the information is not sticking with you, take a short break from the screen, then try again.



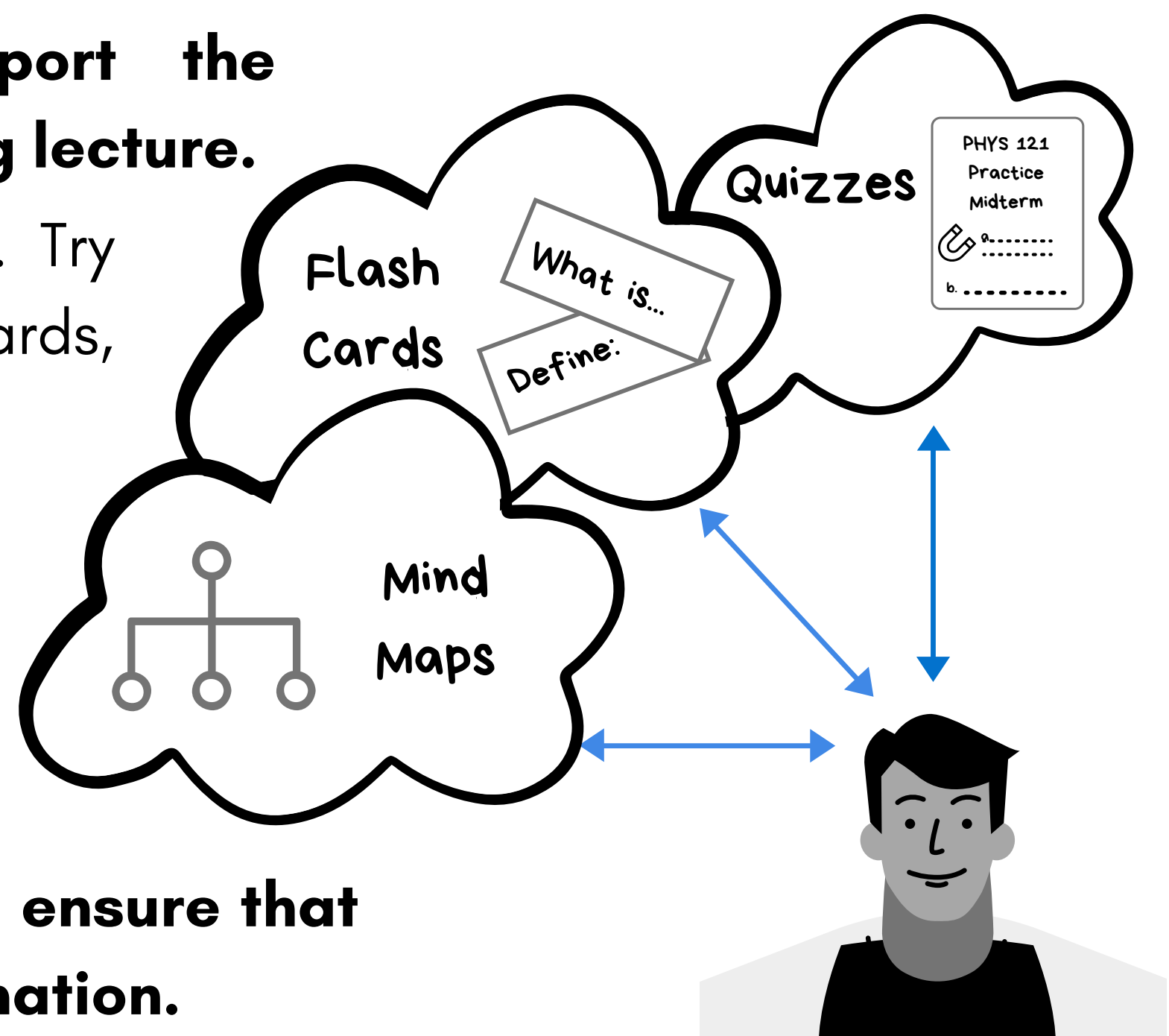
STUDYING WITH RETRIEVAL

PRACTICE BRINGING INFORMATION TO MIND USING DIFFERENT METHODS

HOW TO DO IT

Use different methods to support the information you have learned during lecture.

There are several ways to do this. Try creating mind maps, making flashcards, or writing practice quizzes that can be exchanged with classmates.

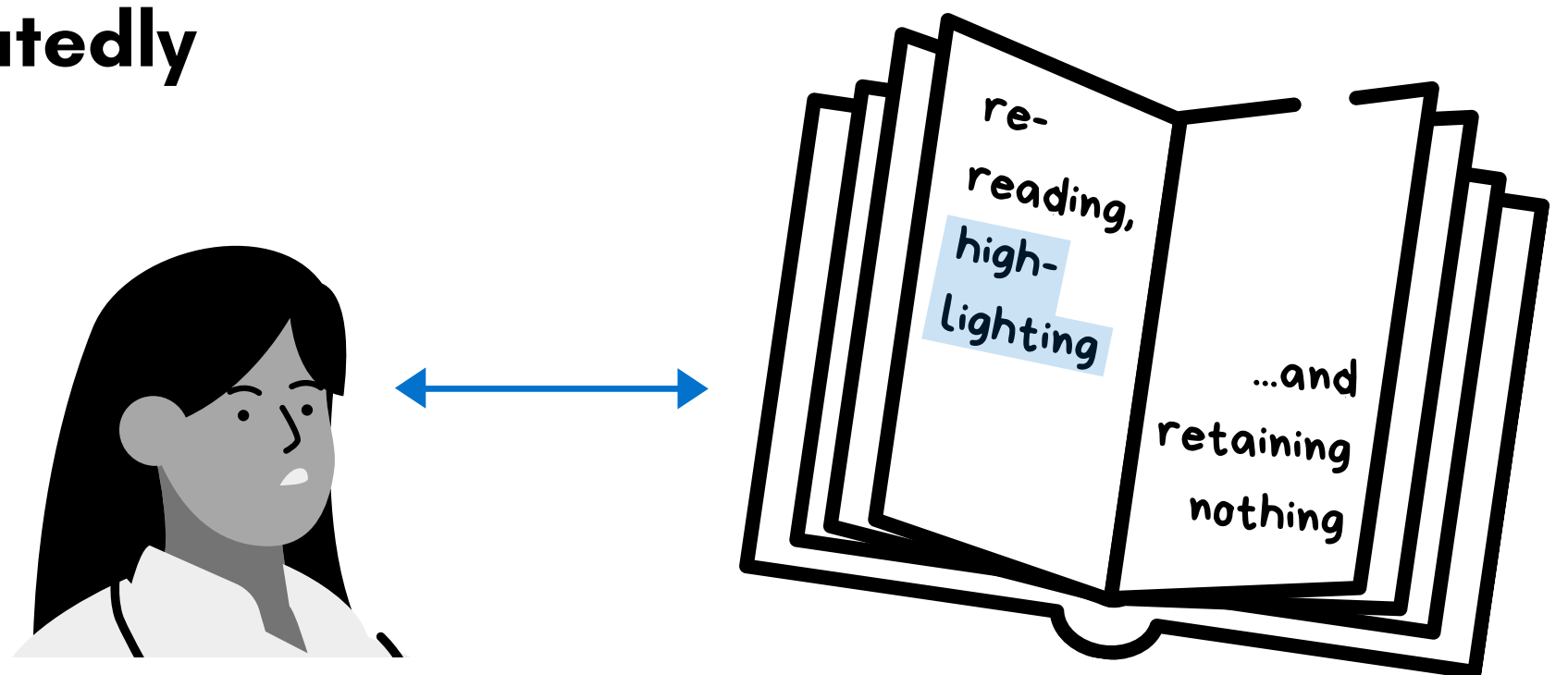


Always refer back to class notes to ensure that you are retrieving the correct information.

AVOID

Re-reading, highlighting, and repeatedly going over the same notes.

Retrieval methods can be challenging. However, they allow information to be retained in your long term memory.



CONCRETE EXAMPLES

USE SPECIFIC EXAMPLES TO REINFORCE YOUR UNDERSTANDING OF ABSTRACT IDEAS

HOW TO DO IT

Identify the concept that re-appears in course examples.

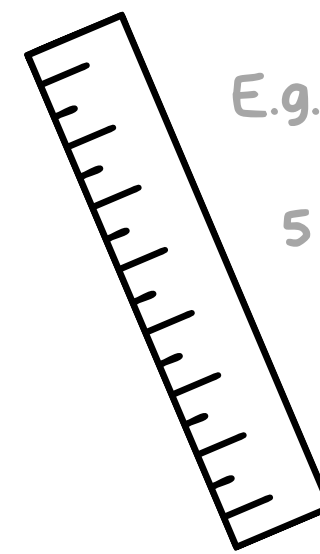
Make connections between this main concept that you are studying and each example.



E.g. 2 - mass conversions

$$10 \text{ g} \times \frac{1 \text{ kg}}{1000 \text{ g}} = 0.01 \text{ kg}$$

as 1 kg = 1000 g



E.g. 1 - length conversions

$$5 \text{ cm} \times \frac{1 \text{ m}}{100 \text{ cm}} = 0.05 \text{ m}$$

as 1 m = 100 cm



Principle = unit conversion

$$\text{starting unit} \times \frac{\text{desired unit}}{\text{starting unit}} = \text{desired unit}$$

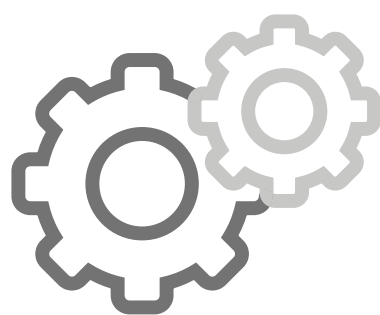
Ask yourself...

- Why is this example relevant?
- What theories or principles are used here?

AVOID

Memorizing every detail for each example.

Learn how the examples used in class actually apply to the main principle.



~~g → kg : multiply by 1000~~

~~kg → g : divide by 1000~~

STUDYING WITH SPACING

SPACE OUT YOUR STUDYING OVER TIME

HOW TO DO IT

Review information from each class, but not immediately after class.

Schedule study sessions ahead of time and stick to it. This helps you manage your time for all of your classes.

Always return to relevant, older information to help keep it fresh in your mind too.

PHYS 124 Study Schedule

DAY 1	DAY 2	DAY 3	DAY 4
Study 15 min		Study 20 min	

DAY 5	DAY 6	DAY 7	DAY 8
Study 30 min		Review 1 hour	Final 9:00 am

AVOID

Cramming info in all at once.

You will not be able to retain any information if you force yourself to learn it all in a short period of time.

Go through little bits over time. It will add up!

DAY 1	DAY 2
Cram all day	Final 9:00 am

STUDYING WITH ELABORATION

EXPLAIN AND DESCRIBE IDEAS WITH DETAILS

HOW TO DO IT

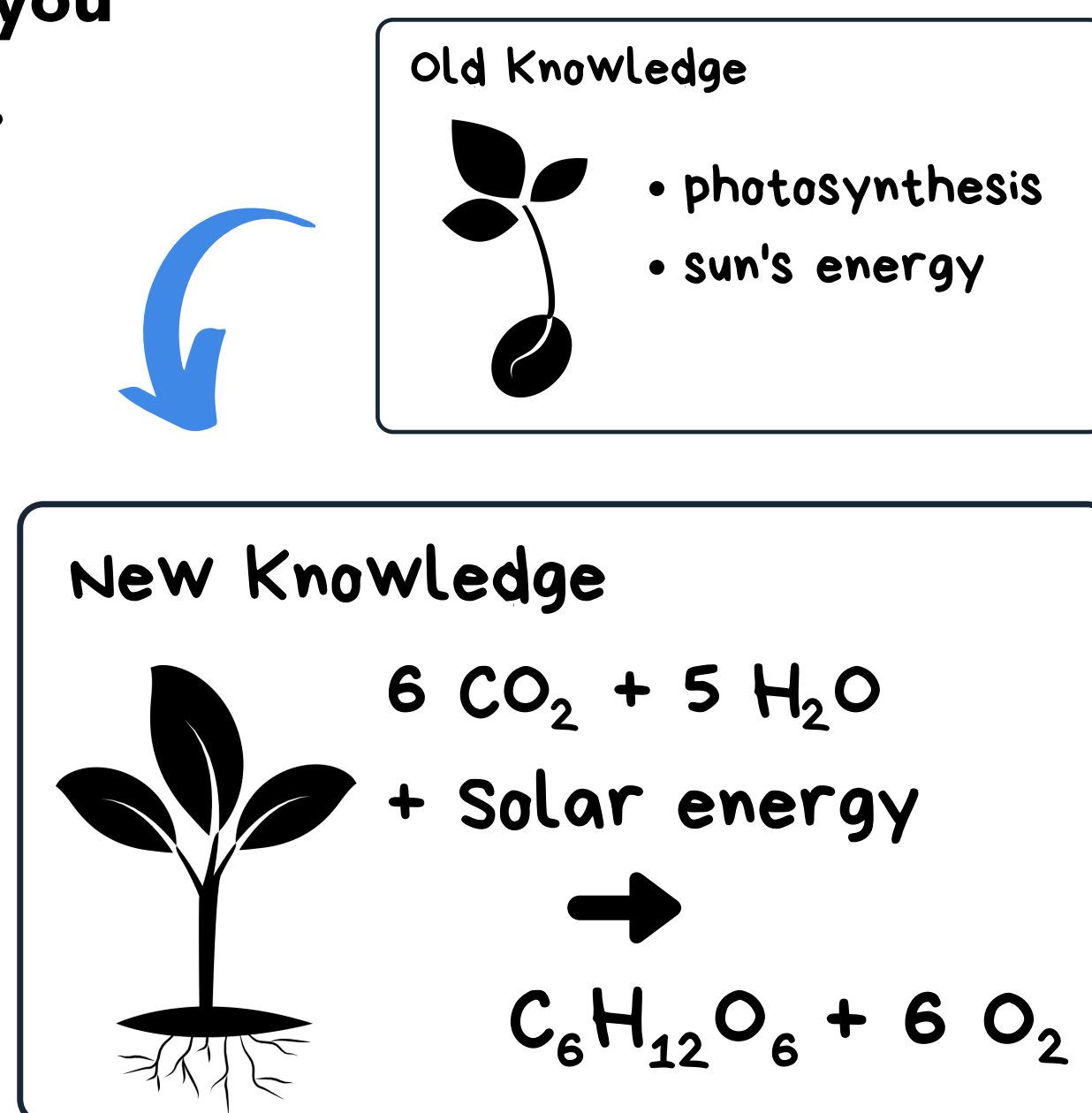
Make connections within the material that you are learning to solidify your understanding.

While attempting to learn new information, make connections with previously known ideas or experiences.

Ask yourself..

- How do they work together?
- How are they similar or different?

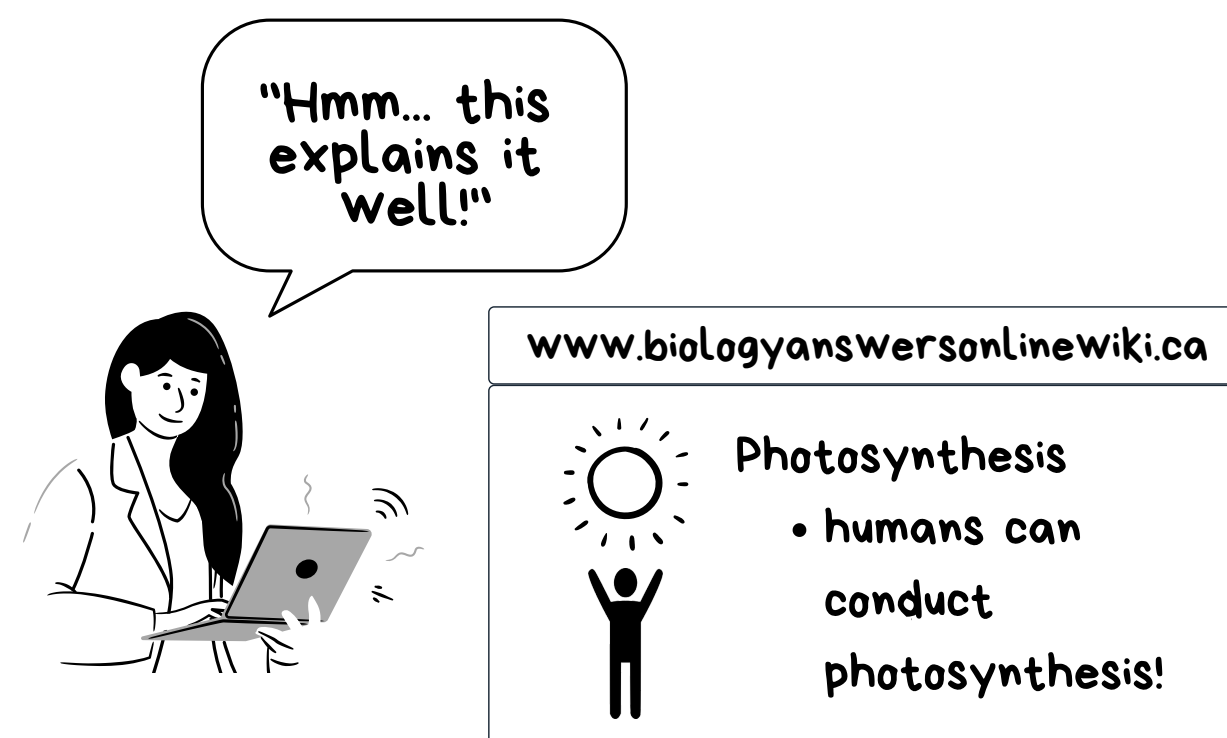
Discuss answers with classmates.



AVOID

Assuming information and making false connections.

Make sure to double check with your course notes to ensure that the connections that you are making are accurate.



STUDYING WITH DUAL CODING

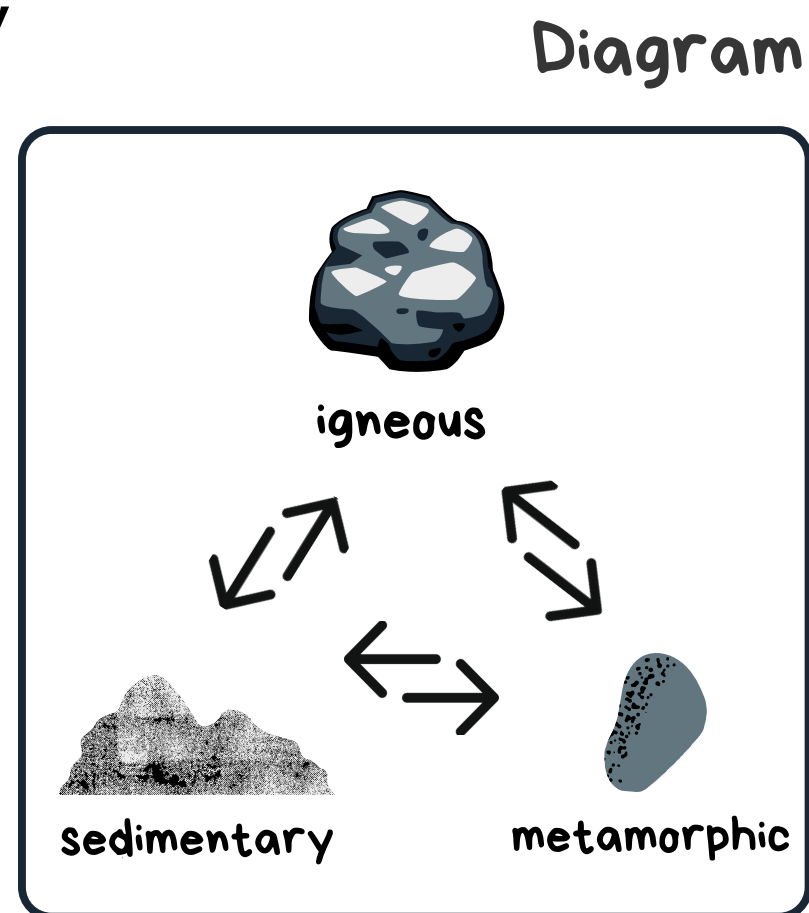
CONNECT CLASS TOPICS TO VISUALS

HOW TO DO IT

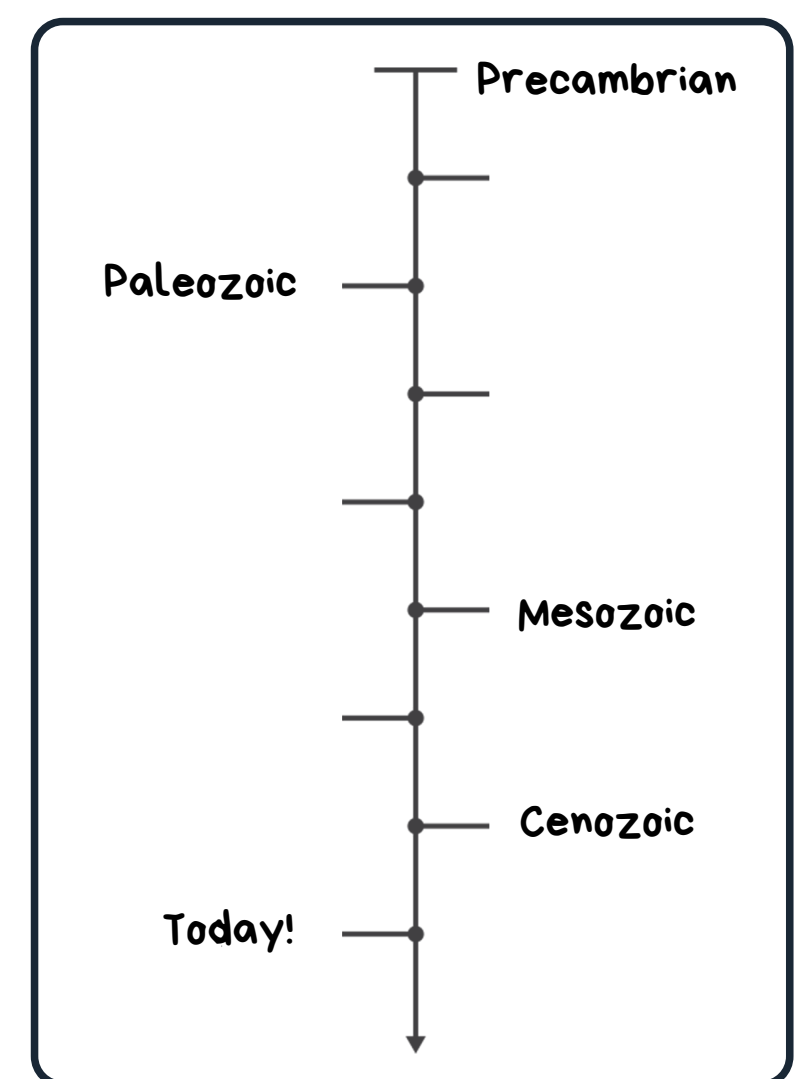
Look at class materials and create suitable visuals to describe what you are learning.

Visuals can include infographics, timelines, cartoon strips, diagrams, graphic organizers, and more.

Afterwards, take a look at your visuals, and explain in your own words what they mean.



Timeline



AVOID

Relying solely on another's visual from the Internet.

Visualize it in a way that works for you. Otherwise, you may have trouble explaining it!

