RIT

Team Up for Learning:

Active, Flipped & Student-Driven

Cindy Tawaf (CET)

Thursday, May 15 | 10:00-10:50AM | Wallace Library, Room 3440

Welcome! Please take a seat.

Team Up for Learning:

Active, Flipped & Student-Driven

Agenda

- Introduction/Activity Instructions – 10 min.
- Concept Mapping Team Activity – 12 min.
- Gathering Feedback - 10 min.
  - Complete Activity Survey & Review Results
  - Use of Surveys in Class
- LA/TA Discussion – 10 min.
- Q&A – 8 min.

Flipped Learning Model

- **What is Flipped Learning?**
  - First contact with new concepts is done in the individual learning space.
  - This allows for a group learning space that is a dynamic, interactive environment where the educators guide the students as they apply concepts and engage creatively in the subject matter.
  - Active Learning is an important part of Flipped Learning.
- **What are the benefits of Flipped Learning?***
  - Driver vs. Passenger
  - Our experiences with the first time we heard about or tried something new
  - What you will experience when you work as an engineer, researcher, entrepreneur, and many other careers.
  - What I have observed through teaching.
  - Studies have shown that students tended to be 1.5 times more likely to fail STEM courses with traditional lecture-based teaching than in an active learning-focused course.

*If you use it in your class, you need to “market it” (explain the benefits).

Reference: Flipped Learning by Robert Talbert

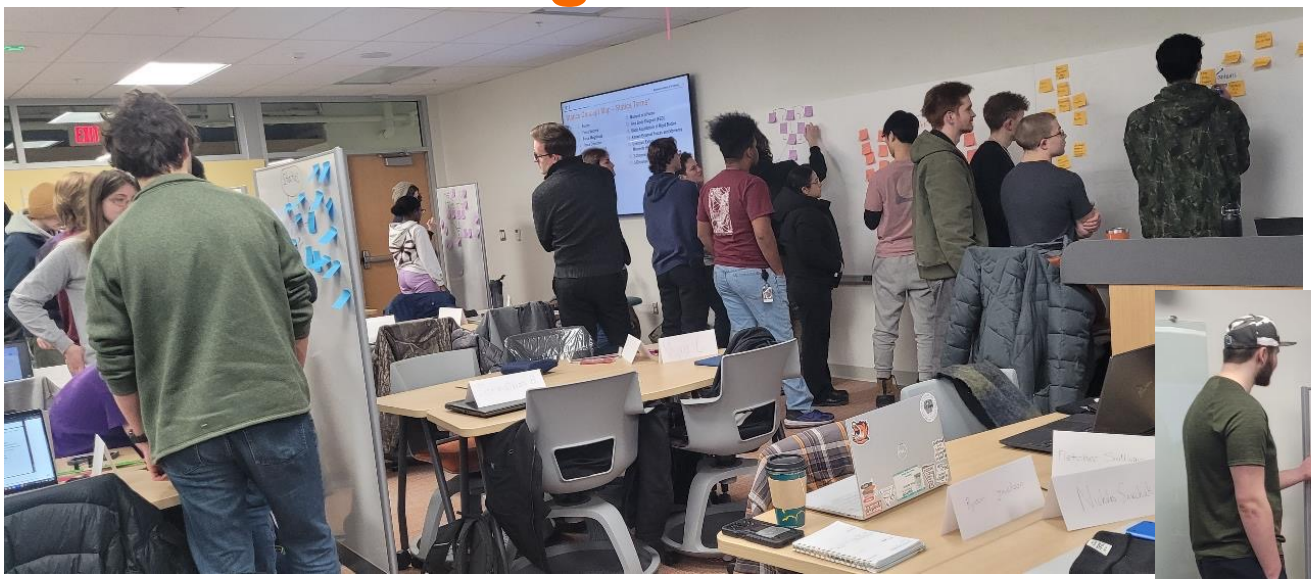
Flipped Learning Model

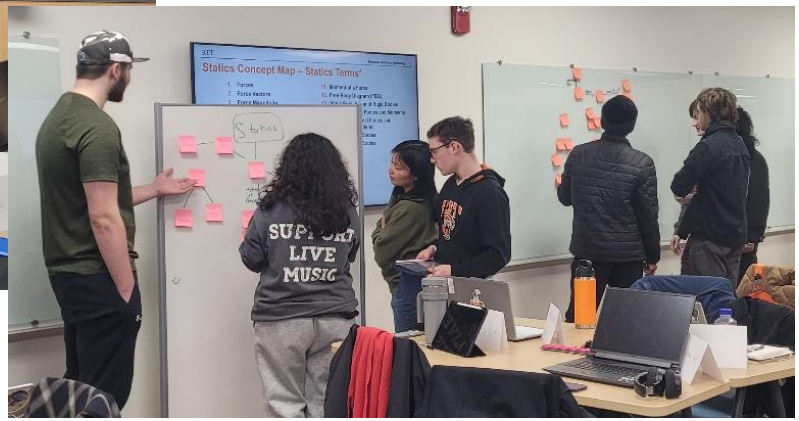
- **Pre-Class Learning to Prepare for In Class Activities**
  - Complete Readings (Textbook, PowerPoint files, etc.)
  - Watch Videos (You Record, Other Sources, etc.)
  - Complete Knowledge Check (at home quiz, summary notes, discussion board questions, etc.)
- **In Class**
  - Review Survey results and questions from last class (or at end of each class)
  - Answer questions on new material
  - Go over one or more examples
  - Work in teams on In Class Exercises

Flipped Learning Model

- **In Class (IC) Exercises**
  - Work in Table Teams (3 to 4 ideal; up to 6)
  - Use Whiteboards
  - Not turned in for grading
  - To encourage participation, though, students receive participation grade for each (IC)
  - Post IC solutions after class. Students encouraged to take picture to compare their work to the solution.
- **Student Feedback on their understanding**
  - Use Surveys following each IC to gauge understanding.
  - More on this later.
- **This model can be applied to a variety of in-class activities.**

Active Learning





Concept Mapping Activity

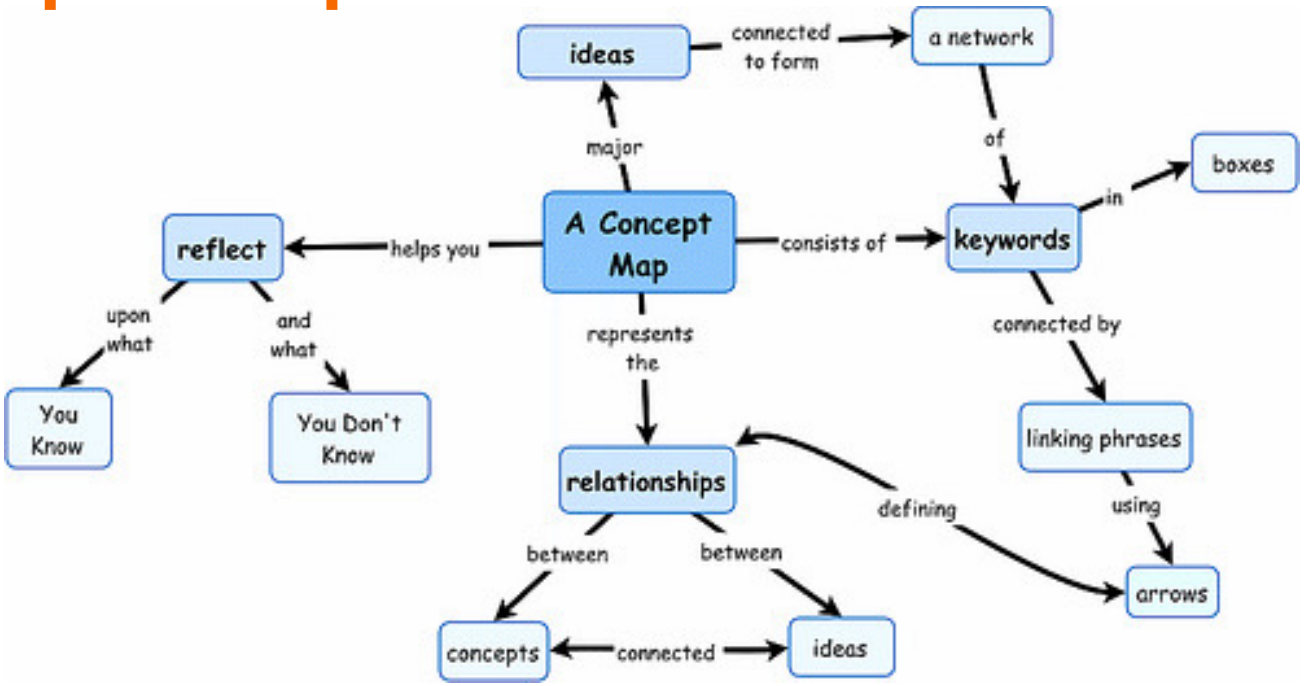
- **Objectives (what you would show your students)**
  - Overall – To create a tool that will help students to gain a better understanding of (your course) and see how each of the topics covered in the course fit together.
  - Today's Activity
    - To draw on your prior knowledge and see connections to topics from (base knowledge or pre-req course), which will enable the first draft of the Concept Map to be created.
    - To get to know your teammates at your table who you will be working with throughout the semester.
  - Rest of the Semester
    - Before each Exam, you will make updates to your Concept Map.
    - Future updates will be made using a program for Concept Maps.
- **What we're doing in this Workshop today**
  - Getting experience with creating a Concept Map, Active Learning and Feedback.

What is Concept Mapping

- A Concept Map is a diagram that shows relationships between concepts.
- It can be used to organize and structure knowledge.
- Ideas and information are stated in boxes or circles, which are connected with arrows in a downward-branching hierarchical structure.
- The relationship between concepts can be shown with linking phrases such as "causes", "requires", "such as" or "contributes to"

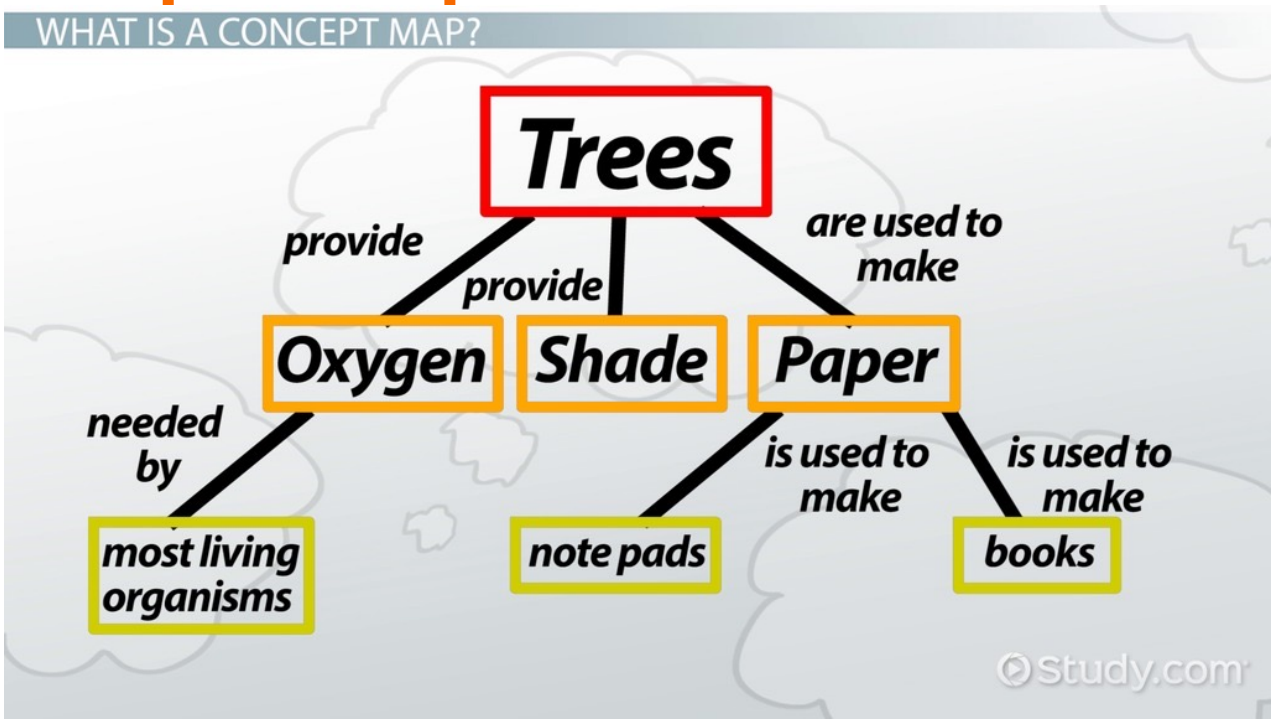
Source: https://en.wikipedia.org/wiki/Concept_map

Concept Map Example

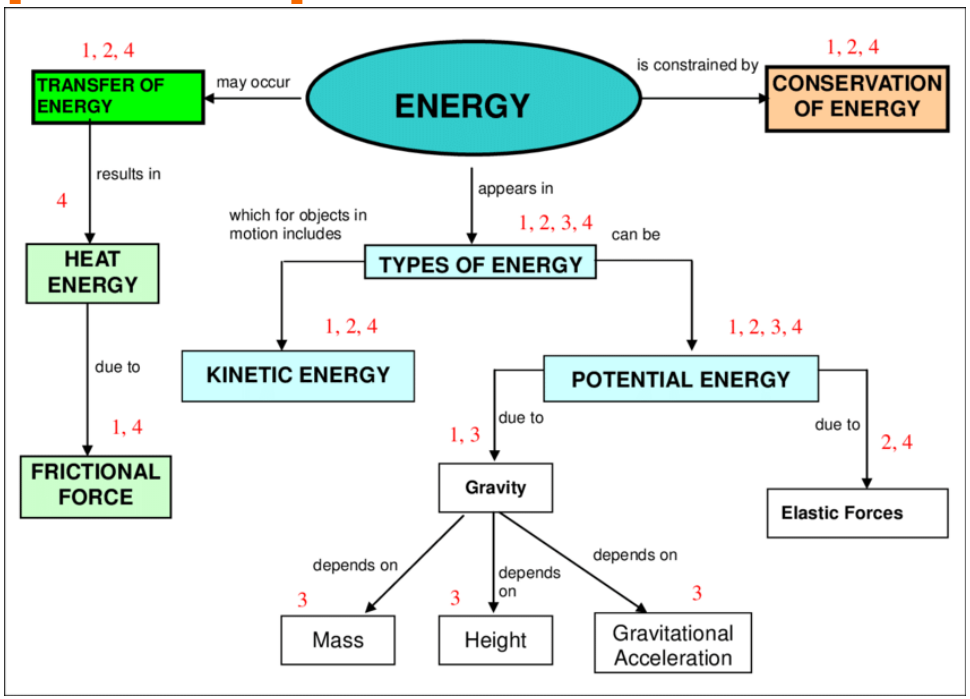


Source: https://www.morgan.edu/academic-affairs/resources/instructional-technology/teaching-with-technology/concept-maps

Concept Map Example



Concept Map Example



Concept Map - First Draft

- **Overall Goal: Work with your teammates (everyone at your table) to construct a Concept Map using Post It Notes and Dry Erase Markers on a whiteboard area (along the wall or one on wheels).**
- **Important Notes:**
  - Don't get stressed about doing this. It's a participation only grade.
  - Do the best you can based on your background knowledge. This is a starting point. You will make several more updates to this Concept Map as you learn the material of this course.
  - Creating these Concept Maps will help you to better understand (your course).

Concept Map – First Draft Instructions

- **Your TA will distribute Post It Notes, Sharpie Markers and Dry Erase Markers to your table.**
- **Workshop only: Team chooses a Concept Map Topic from the printed options at the table.**
- **Use the list of terms provided.**
  - Write each term on a Post It Note with a Sharpie Marker.
  - Arrange them on the whiteboard to create your Concept Map.
    - Talk about it with your team. You may not all be in 100% agreement, but you'll have to come to a consensus.
    - You can look the terms up (online, in your text), if needed, but you don't have a lot of time to do that. So mostly use your background knowledge.
    - Rearrange, as necessary.
  - Draw connecting arrows with the **Dry Erase** Markers.
    - Include linking phrases such as "causes", "requires", "such as" or "contributes to" where appropriate.
    - Again, your team should be talking as you go and coming to a consensus.
    - Erase and re-do, as necessary.
  - **Each team member must take a photo and upload it to the drop box.** This photo will be your starting point for the next iteration of your Concept Map.

Gathering Feedback

- **Provide your feedback for this Concept Map Activity**
  - Use the QR Code on the sheet at your table to access the survey.
  - Answer the questions and we'll review the feedback.
- **Feedback in your courses**
  - Methods
    - myCourses Surveys or Quizzes (see Survey example on next slide)
    - Google forms
    - Word Clouds – Mentimeter, Slido
  - What to do with it
    - As a class, further explanation of the topic
    - Individual, follow up with students who reply they are getting only half or are lost.

Gathering Feedback

- **Example Survey Results – Completed after IC**

Completion Summary

44 attempts have been completed

Question 1

After working on the IC(s) today, I would describe my level of understanding of this material and ability to solve the problems as the following:

I feel pretty good about it, considering it's new material.	20	(43.48 %)
I think I will get there, but there are a few points that I still need help with.	18	(39.13 %)
I am only understanding about half of it.	4	(8.7 %)
I feel totally lost, and I want to be honest about it so that I can get help and learn the material.	4	(8.7 %)

Gathering Feedback

Question 2

What are some of the questions that you still have about this material? Where are you getting confused or stuck when you are trying to work through the IC problems?

Answers for blank # 1

Collapse Responses

- the part that I get confused on is setting up the work to solve for all of the forces, and a little bit of the solving for those forces.
- relation of x and y axes to horizontal and vertical
- Just trying to make sure i know whether to use cos or sin to get the side that i need
- Finding the component using calculation was bit confusing
- no
- how to set up everything
- Need more practice with it
- I am bit confused about Fn where it come from. I also confused on how to use a triangle since it just there
- How to set it up correctly

LA/TA Discussion

- **What roles do LA/TA's play in Active/Flipped Learning?**
  - Passing out and collecting supplies and name tents
  - Assessing and entering participation grades
  - Sitting amongst students at start of class to help keep them focused
  - Circulating around to answer questions during IC's or any activity
  - Debrief during end of class clean up – What did they observe?
- **Sharing from LA/TA's**

Questions and Answers