

WESTMINSTER COLLEGE'S ENVIRONMENTAL PROJECT MANAGEMENT ACADEMY

TALKING POINTS

KNOWLEDGE

1. Which three disciplines does the EPMA programme combine?
2. What have the EPMA's three projects to date investigated?

COMPREHENSION

3. What important workplace skills might STEM students be lacking?
4. What important workplace skills might business students be lacking?

APPLICATION

5. How could EPMA's collaborative projects develop useful skills for working in the field of artificial intelligence?
6. How could EPMA's collaborative projects develop useful skills for advancing businesses' environmental credentials?

ANALYSIS

7. Skills like project management are typically gained in the workplace. From your experience, do you think they should be taught in the classroom?
8. Why do you think EPMA teaches leadership skills, given that most graduates will initially get relatively junior jobs where they have no official leadership responsibilities?

SYNTHESIS

9. Think about your country's response to the Covid-19 pandemic. Do you think the people in power combined scientific skills, project management and leadership in the ways that the EPMA team recommend? Give examples of why or why not.
10. In decades and centuries past, scientists were generally less collaborative and also had a wider field of expertise than those working today. Why do you think this has changed?

EVALUATION

11. Do you think EPMA's focus on learning a broad range of skills is appropriate for everyone, or do you think becoming specialised in a single area of science or academia is still the best path for some? Why or why not?
12. Mr Petrus says, "It is my belief that almost all future jobs will require a basic understanding of science and math." How much do you agree with this statement?

ACTIVITIES FOR HOME OR IN THE CLASSROOM

In the EPMA cluster, they dedicate a class session where students work in small groups on the spaghetti tower challenge with a project management twist.

Usually, this challenge focuses solely on building the tallest tower. The EPMA team use some additional metrics so that the challenge mimics project management more closely.

The challenge includes a budget. Students have to build the tower within a \$100 budget, using a variety of materials. You should budget for everything, including transportation. Recommended materials and pricing are shown below:

MATERIAL	PRICE
Transport fee (1st free)	2
Spaghetti (5 pieces)	1
Straw (each)	3
Marshmallow (L) each	4
Marshmallows (S)/cup	10
Scotch tape (roll)	7
Cup (3 oz size, each)	5

Each tower is assessed on multiple performance metrics:

CRITERIA

- Tallest (within budget)
- Time (30 minutes to plan and build)
- Durable (able to stand for 5 minutes)
- Strength (able to support a composition notebook without falling)

Groups are asked to document how they use their time within the phases of project management (and then discuss at the end).

5 PHASES

Consider how much time you want to spend in each phase:

- Initiation:** Explanation of the tower exercise
- Planning:** How will you design your tower? How will you expend your budget?
- Execution:** How will you build your tower?
- Monitoring:** Will your tower survive and meet the criteria?
- Close:** Discussion and evaluation of the exercise

This challenging activity integrates science, project management, and intangible skills. Good luck!