Design Thinking
How AMP Modules are designed for Rigor and Relevance

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Rigor and Relevance Scale
Can you finish this saying

Tell me, I forget

_____ me, I ________

__________ me, and I ____________
AMP Packaging Challenge Math Module

- **Just Like Home** is a company that packages hanging kits for lockers and staterooms.
- Your team has been asked to help the company find an efficient and consistent way to package their locker and stateroom kits.
AMP Packaging Challenge Math Module

Their standard hanging kit includes:
- 2 nut and bolt sets
- 4 plastic anchors
- 4 picture hangers
- Just Like Home logo

Just Like Home!
How many kits can your team package in 90 seconds (Trial 1)

- First, discuss as a team then write down your procedure for packaging.
- Second, do not start packaging until the countdown timer begins.
- Third, stop packaging when the timer ends.
- Record the completed number of packages only on your data sheet.
How many kits can your team package in 90 seconds (Trial 2)

- First, discuss as a team then write down your procedure for packaging.
- Second, do not start packaging until the countdown timer begins.
- Third, stop packaging when the timer ends.
- Record the completed number of packages only on your data sheet.
How many kits can your team package in 90 seconds (Trial 3)

- First, discuss as a team then write down your procedure for packaging.
- Second, do not start packaging until the countdown timer begins.
- Third, stop packaging when the timer ends.
- Record the completed number of packages only on your data sheet.

Counting Down

0
How many kits can your team package in 90 seconds (Trial 4)

- First, discuss as a team then write down your procedure for packaging
- Second, do not start packaging until the countdown timer begins.
- Third, stop packaging when the timer ends.
- Record the completed number of packages only on your data sheet
How many kits can your team package in 90 seconds (Trial 5)

- First, discuss as a team then write down your procedure for packaging.
- Second, do not start packaging until the countdown timer begins.
- Third, stop packaging when the timer ends.
- Record the completed number of packages only on your data sheet.
Record and Analyze Your Data

- Record only the completed number of packages on your data sheet
- Calculate the mean, median, and range of your data
Communicate and Graph Class Data
Data as Evidence Discussion

- What does the data show was the fastest way to package?
- What does the data show was the most consistent way to package?
- How would the class graph look if we had a fast and consistent way to package?
The Rest of the Module

- Watch an assembly line video to inspire ideas
- Class discussion leads to common procedure that all groups use for 6 trials
- Calculate mean, median, and range for 6 trial values
- Determine if class graph shows that the common procedure was faster and more consistent
- Each student writes a recommendation to the Just Like Home company on how to package their kits using the data and graphs as evidence for their write up.
How Can This Be Utilized or Referenced in the
Science Class

English Class

Social Studies Class

Other?
Rate the Challenge on the Rigor and Relevance Scale
How Design Thinking is Used to Design the AMP Modules

Five Big Ideas

Problems and Complaints are Design Opportunities
Design Thinking’s Five Big Ideas

Second Big Idea

- Discover and Interpret Opportunities by understanding the System and the Environment
- Requires you to go to environments outside of your own and **Empathize**
Design Thinking’s Five Big Ideas

Third Big Idea

- Brainstorm and Ideate on the Design Opportunities
- Have to have diverse subject matter experts
The Fourth Big Idea

How: Make
Test
Learn

Prototype (various fidelity levels)

MAKE

PROTOTYPE

TEST

Real Users
“Small Data”
Actual Customers
True Stakeholders

LEARN
The Fifth Big Idea

Iterate to Optimize
How Do You Become Part of AMP?

Problem Based

Learning

Inquiry