

Student Activity Sheet

Name: _____ Date: _____ Class: _____

Fun with Proteins!

Phase 1: ENGAGE (5 minutes)

Getting Started: Open peebedu.com and navigate to Protein Modification and Shipping Visualizer

First Look:

What are the five things you can do to proteins in this app?

1. _____
2. _____
3. _____
4. _____
5. _____

Big Question:

What can we do to change proteins?

Phase 2: EXPLORE (20 minutes)

Try It Out!

Activity 1: Add Sugar! (Glycosylation) 🍬 Use the app to add sugar groups to proteins.

How many proteins did you change by adding sugar?

Activity 2: Add Phosphate! (Phosphorylation) ⚡

Use the app to add phosphate groups to proteins.

How many proteins did you change by adding phosphate?

Activity 3: Cut Proteins! (Cleavage) ✂️ Use the app to cut proteins into pieces.

What happened when you cut the proteins?

Activity 4: Send Proteins Places! 🚚 Practice sending proteins to different parts of the cell.

Where did you send the proteins?

Activity 5: Try Everything! Use all five functions and see what happens!

Which activity was your favorite and why?

Phase 3: WRAP UP (5 minutes)

Show What You Know! ✨

Match the Words:

Fill in the blanks to complete the definitions:

Glycosylation = Adding _____ groups to proteins

Phosphorylation = Adding _____ groups to proteins

Cleavage = _____ proteins into pieces

Cell membrane = The _____ of the cell

Lysosome = The cell's _____ center

Exit Ticket: 🎫

Draw an emoji to show how you feel about learning protein modifications: - 🍷

Amazing! - 😄 Fun! - 😊 Interesting - 🤔 Confusing

What was the coolest thing you learned today?

Simple Facts! 🌟

- Cells change proteins to make them work better
- Sugar groups help proteins stick to things
- Phosphate groups can turn proteins on and off
- Cutting proteins can make them active