

Name: \_\_\_\_\_

Date: \_\_\_\_\_

Section: \_\_\_\_\_

## Gene to Protein Simulator Activity

### Bacteria Survival Adventure

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#### Phase 1: ENGAGE (2 minutes)

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**Getting Started:** Open [peebedu.com](http://peebedu.com) and navigate to Gram Theft Strepto

You're a tiny bacterium trying to survive!

**The Setup:**

- You start weak and defenseless
- Floating genes give you superpowers
- Dangers are everywhere!

**Quick Question:** What kills bacteria in real life? \_\_\_\_\_

## Phase 2: EXPLORE (7 minutes)

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### Play Time!

#### Level 1: Power Up

##### Collect Your First Gene:

- What color was it? \_\_\_\_\_

- How did you change? \_\_\_\_\_

##### Collect More:

- Total genes collected: \_\_\_\_\_

#### Level 2: Danger Zone

##### Survival Test:

When you hit a danger:

- Antibiotics (pills): I DIED / SURVIVED with \_\_\_\_\_ gene

- Cold area: I DIED / SURVIVED with \_\_\_\_\_ gene

**Best Strategy:** To win, you should:

## Phase 3: EXPLAIN (4 minutes)

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### How This Works in Real Life

**Gene Stealing:** Real bacteria can grab DNA from:

**Superbugs:** When bacteria collect antibiotic resistance genes, they become:

**Working Together:** In later levels, bacteria team up. This is like when real bacteria:

- Form slimy shields (biofilms)
- Send chemical messages
- Share helpful genes

## Phase 4: ELABORATE (1 minute)

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### Why This Matters

**Hospital Problem:** Some bacteria have collected so many resistance genes that NO antibiotics work! These are called: \_\_\_\_\_

**Your Life:** This is why you should:

## Phase 5: EVALUATE (1 minute)

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### Quick Quiz

Bacteria get new powers by:

The game teaches us that bacteria:

**Think About It:** Why shouldn't you stop taking antibiotics early, even if you feel better?

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**Fun Fact:** Some bacteria share genes like trading cards - except these cards can save their lives!

### Key Vocabulary

See activity for vocabulary specific to this topic.