

# Lab: Peppered Moth Simulation

## BIOLOGY: CHAPTER 10-PRINCIPLES OF EVOLUTION

### Objectives:

- Describe the importance of coloration in avoiding predation
- Relate environmental change to changes in organisms
- Explain how natural selection causes populations to change

### Materials

- 8½" x 11" sheet dark background
- 8½" x 11" sheet light background
- Forceps
- Clock with second hand
- 30 light circles (made with hole punch)
- 30 dark circles (made with hole punch)



**Purpose:** In this lab, you will simulate how predators locate prey in different environments. You will analyze how color affects and organism's ability to survive in certain environments.

**Background:** The usual form of the peppered moth *Biston betularia* in northern Europe has a light "peppered" pattern of coloration. The moth rests on tree branches and its color pattern **camouflages** it against predatory attack. The camouflage only works against the right background: birds are more likely to eat poorly camouflaged moths, which therefore have a lower **fitness**.

The light coloration of tree branches is mainly caused by lichens that grow there. Smoke pollution in the industrial revolution in the UK killed these lichens near to industrial areas, leaving tree branches black. At about this time, around 1830, a '**melanic**' form of the peppered moth becomes increasingly common in contemporary moth collections. The melanic form is camouflaged on dark tree branches. Through the 19th century, the melanic form increased in frequency until, near industrial regions, it was the normal type of the moth. The increase was almost certainly driven by natural selection.

The moths satisfy all four conditions for natural selection:

- they reproduce;
- their color pattern is inherited;
- there is variation in their color patterns;
- the different forms have different fitnesses.

Before you begin the lab, complete the hypothesis below:

**Hypothesis:** If the color of the prey matches the background color then

# Peppered Moth Virtual Lab

**A Loxley**



## **Peppered Moth Virtual Lab:**

## Unveiling the Power of Verbal Artistry: An Mental Sojourn through **Peppered Moth Virtual Lab**

In some sort of inundated with screens and the cacophony of quick conversation, the profound power and mental resonance of verbal artistry usually disappear into obscurity, eclipsed by the continuous barrage of sound and distractions. Yet, set within the musical pages of **Peppered Moth Virtual Lab**, a fascinating function of fictional beauty that impulses with raw thoughts, lies an unique journey waiting to be embarked upon. Penned by way of a virtuoso wordsmith, that enchanting opus courses visitors on a psychological odyssey, softly revealing the latent possible and profound impact embedded within the intricate internet of language. Within the heart-wrenching expanse with this evocative examination, we can embark upon an introspective exploration of the book is central subjects, dissect its captivating publishing design, and immerse ourselves in the indelible impact it leaves upon the depths of readers souls.

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