# Lab investigations/scientific method

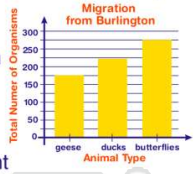
BIO

Name_____ Class_____ Date_____

**1** Which structure is best observed using a **compound light microscope**?

**A** a cell
**B** a virus
**C** a DNA sequence
**D** the inner surface of a mitochondrion

**2** **Diagrams, tables, and graphs** are used by scientists mainly to




**A** design a research plan for an experiment
**B** test a hypothesis
**C** organize data
**D** predict the independent variable

**3** A solution of glucose and yeast was placed in a vacuum bottle as shown below. The **temperature** of the yeast-glucose solution increased over time, and the **color of the indicator** was recorded.

The **purpose of the investigation** was most likely to demonstrate


**4** A marble was placed in a graduated cylinder containing **100 milliliters** of water. The diagram below illustrates the new level of water.

What is the **volume** of the **marble**?

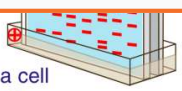




**5**

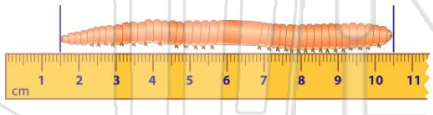
**7**

**B** determine the pH of a cell
**C** determine the charge of a cell
**D** determine the size of a cell



**B** The dialysis membrane actively transported yellow dye molecules.
**C** Only red dye diffused through the membrane.
**D** The yellow dye molecules are smaller than the red dye molecules.

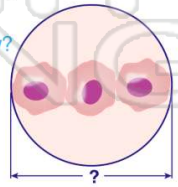
**9** What is the **approximate length** of the earthworm shown in the diagram below?




**A** 9 mm
**B** 90 mm
**C** 10.6 cm
**D** 106 cm

**10** The diagram below shows three cells in the field of view of a microscope. The approximate diameter of each cell is **250 µm**.

What is the **approximate diameter** of the **field of view**?




**A** 50 µm
**B** 750 µm
**C** 500 µm
**D** 4,500 µm

# Lab investigations/scientific method - Answer Key

BIO

Name_____ Class_____ Date_____

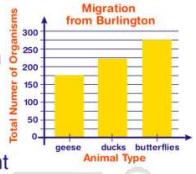
**1** Which structure is best observed using a **compound light microscope**?

**A** a cell
**B** a virus
**C** a DNA sequence
**D** the inner surface of a mitochondrion

A

**2** **Diagrams, tables, and graphs** are used by scientists mainly to

**A** design a research plan for an experiment
**B** test a hypothesis
**C** organize data
**D** predict the independent variable




C

**3** A solution of glucose and yeast was placed in a vacuum bottle as shown below. The **temperature** of the yeast-glucose solution increased over time, and the **color of the indicator** was recorded.

The **purpose of the investigation** was most likely to demonstrate


B

**4** A marble was placed in a graduated cylinder containing **100 milliliters** of water. The diagram below illustrates the new level of water.

What is the **volume** of the **marble**?


B

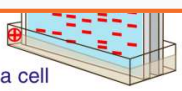


**5**

C

**7**

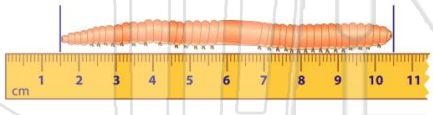
**B** determine the pH of a cell
**C** determine the charge of a cell
**D** determine the size of a cell



D

**B** The dialysis membrane actively transported yellow dye molecules.
**C** Only red dye diffused through the membrane.
**D** The yellow dye molecules are smaller than the red dye molecules.

**9** What is the **approximate length** of the earthworm shown in the diagram below?



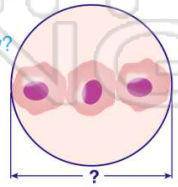

**A** 9 mm
**B** 90 mm
**C** 10.6 cm
**D** 106 cm

B

**10** The diagram below shows three cells in the field of view of a microscope. The approximate diameter of each cell is **250 µm**.

What is the **approximate diameter** of the **field of view**?

**A** 50 µm
**B** 750 µm
**C** 500 µm
**D** 4,500 µm




B