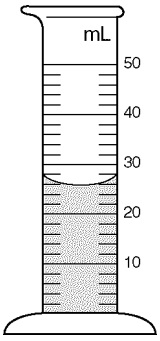
1 star lab skills

Name: _____ **Date:** _____

1. What is the volume of the liquid in the graduated cylinder shown below?



A. 23 mL B. 26 mL C. 27 mL D. 28 mL

2. A biologist formulates a hypothesis, performs experiments to test his hypothesis, makes careful observations, and keeps accurate records of his findings. In order to complete this process, the biologist should

A. adjust the data to support the hypothesis

B. eliminate data that do not support the hypothesis

C. write a research paper explaining his theories before performing his experiments, in order to gain funding sources

D. evaluate the findings and, if necessary, alter the hypothesis based on his findings, and test the new hypothesis

3. When using a compound light microscope, the most common reason for staining a specimen being observed is to

A. keep the organism from moving around

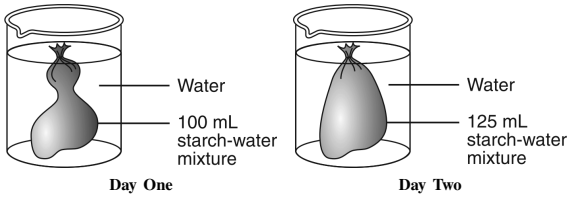
B. make the view more colorful

C. determine the effects of chemicals on the organism

D. reveal details that are otherwise not easily seen

4. Base your answer(s) to the following question(s) on the information and diagram below and on your knowledge of biology.

In an experiment, students placed a dialysis bag containing 100 mL of a starch-water mixture in a beaker of water, as shown below. They left the setup until class the next day, when they removed the dialysis bag and measured the volume of the contents. They found that there were now 125 mL of the starch-water mixture.

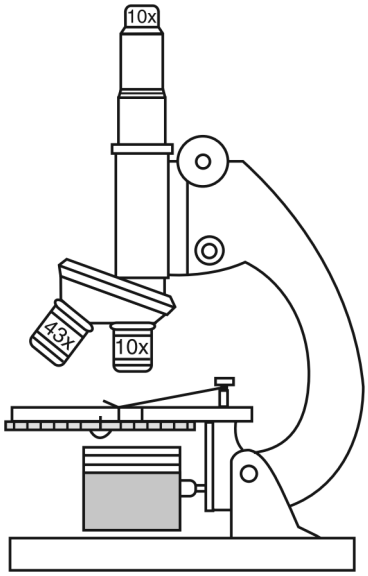


To measure the volume of the starch-water mixture in the dialysis bag, the students should have used a

A. meterstick B. triple-beam balance

C. graduated cylinder D. test tube

5. Base your answer(s) to the following question(s) on the diagram of a compound light microscope below and on your knowledge of biology.



What is the total magnification of this microscope using the high-power objective lens?

A. 43x B. 53x C. 100x D. 430x

6. A slide of human blood cells was observed in focus under the low-power objective of a compound light microscope that had clean lenses. When the microscope was switched to high power, the image was dark and fuzzy. Which parts of the microscope should be used to correct this situation?

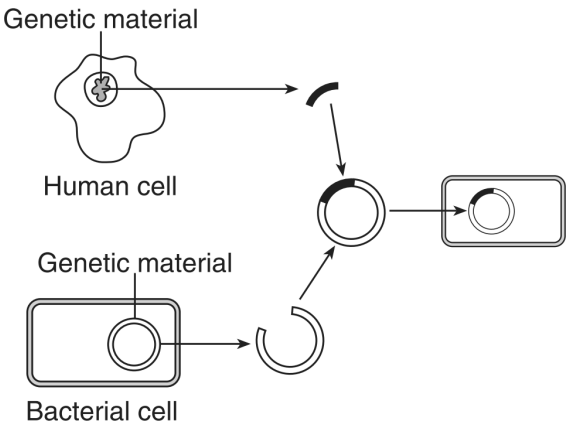
A. nosepiece and coarse adjustment

B. diaphragm and ocular

C. objective and fine adjustment

D. diaphragm and fine adjustment

7. A laboratory technique is represented in the diagram below.



Which knowledge was needed to develop this technique?

A. knowledge of sexual reproduction in plants

B. knowledge of the structure of starch molecules

C. knowledge of the development of embryos

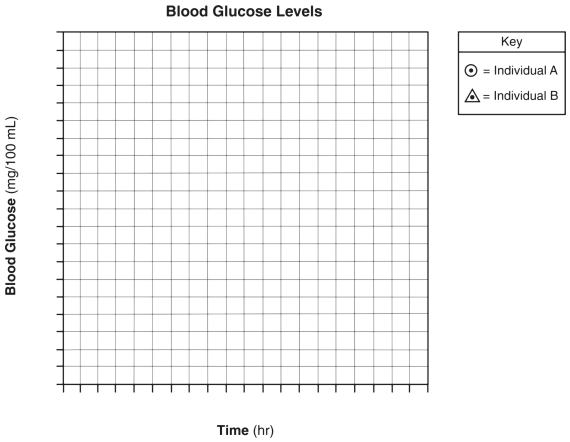
D. knowledge of the structure of a DNA molecule

8. Base your answers to the following question(s) on the information and data table below and on your knowledge of biology.

Diabetes is a disease characterized by consistently high blood glucose levels (at or above 126 mg/100 mL) as a result of hormone deficiency. For a study of diabetes, blood glucose levels from individual A and individual B were recorded each hour over a 5-hour period following a meal. The results are shown in the data table below. Blood Glucose Levels (mg/100 mL).

Blood Glucose Levels
(mg/100 mL)

Hours	Individual A	Individual B
0	135	90
1	175	122
2	200	110
3	185	87
4	165	85
5	150	90



Directions: Using the information in the data table, construct a line graph on the grid on the next page, following the directions below.

Mark an appropriate scale, without any breaks, on each labeled axis.

9. Base your answer to the following question(s) on the information below and on your knowledge of biology.

Environmentalists and public health experts are warning the public about some chemicals that they come in contact with daily, such as PBDEs and phthalates. PBDEs are used to make children's clothing flame retardant and phthalates are used to manufacture many plastic bottles, toys, and cosmetics. Both of these chemicals accumulate in the body and endanger health.

In one family tested, the young children had PBDE levels seven times that of their parents. These levels were two to three times the levels that caused thyroid problems in animals. Animal studies have shown that phthalates cause reproductive defects. Even at low levels, phthalates may contribute to infertility and impaired testes in males. Both chemicals can cause nervous system damage.

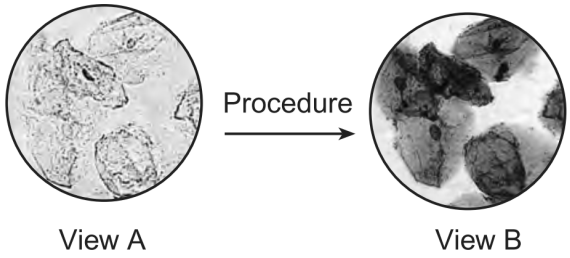
Biomonitoring is a technology used to test for levels of industrial chemicals found in the body. The technology is less than ten years old, but results from animal studies led some countries to ban PBDEs in 2004.

Presently, the United States EPA (Environmental Protection Agency) does not require chemical manufacturers to conduct human toxicity studies prior to approval for use. If concerns regarding risk or exposure arise during the approval process, the EPA can ask for additional testing. Additional testing occurs for approximately 10 percent of the new chemicals submitted each year. The EPA has also set up voluntary testing programs with major chemical manufacturers to rate some of the 3,000 most widely used chemicals.

The use of industrial chemicals, such as PBDEs and phthalates, provides both advantages and disadvantages. Discuss the disadvantages of using these chemicals.

State *one* possible reason why young children might have higher levels of exposure to these chemicals than do adults.

10. Two views through a compound light microscope of a wet-mount slide preparation of cells are shown in the photographs below.



View A View B

Which procedure was most likely followed to obtain view *B*?

1 star lab skills 05/26/2015

1.
Answer: B

2.
Answer: D

3.
Answer: D

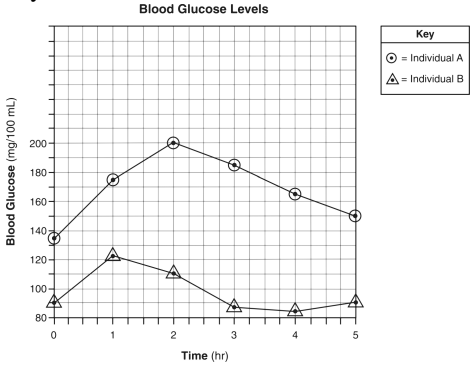
4.
Answer: C

5.
Answer: D

6.
Answer: D

7.
Answer: D

8.
Answer: marking an appropriate scale, without any breaks, on each labeled axis.



9.
Answer: – Young children have more contact with the products that contain these chemicals.

– Young children play with more toys/use baby bottles.

– Children wear flame-retardant clothing.

10.
Answer: adjusting the diaphragm

staining

adding iodine

adjusting the light