

26-3 How Do the Chromosomes of Unborn Children Look?

Normal babies have 46 chromosomes in each cell. They have 22 pairs of chromosomes and one pair of sex chromosomes in each cell. If the chromosome number varies, or chromosome pairs do not match, the baby may be born with a birth defect. A birth defect is a physical or mental problem present at birth.

It is possible to check a baby's chromosomes before it is born. When the baby's chromosomes are checked, fluid from around the baby is removed. The cells in the fluid are grown and then examined for chromosomes. The chromosomes are photographed. The chromosomes in the photograph are then cut out, paired, and examined. Thus, parents can find out if their baby may not be normal at birth.

GOALS

In this exercise, you will:

- a. trace chromosomes to pair them.
- b. pair chromosomes and make observations about them.

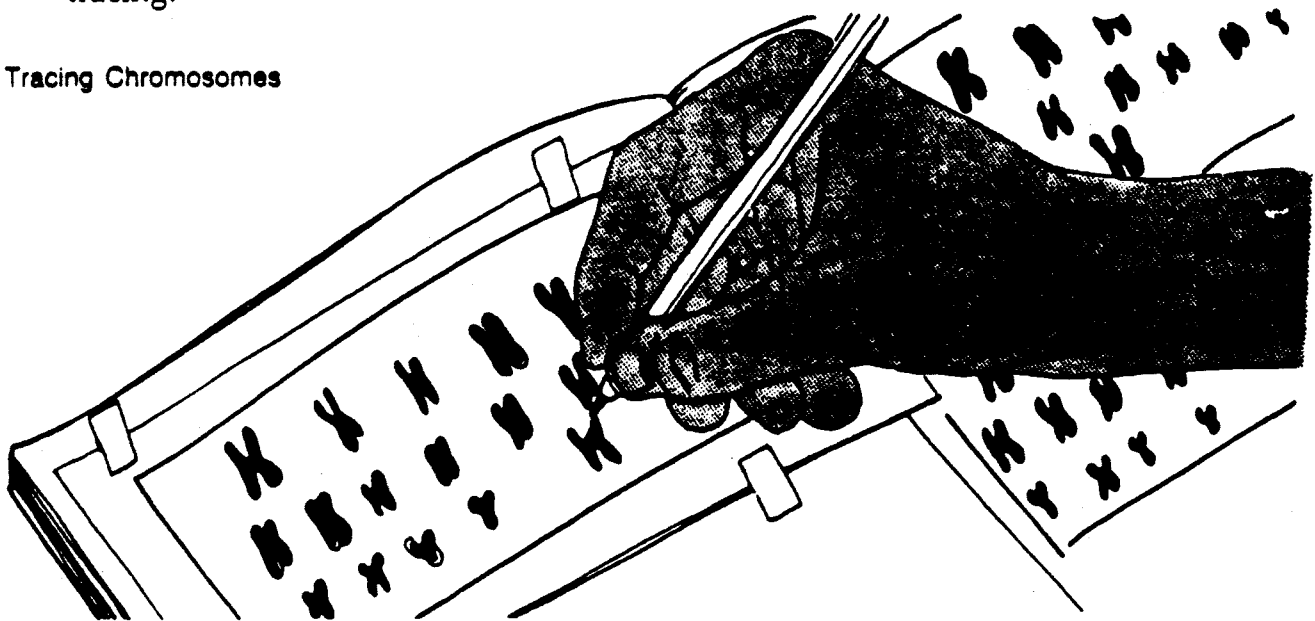
MATERIALS

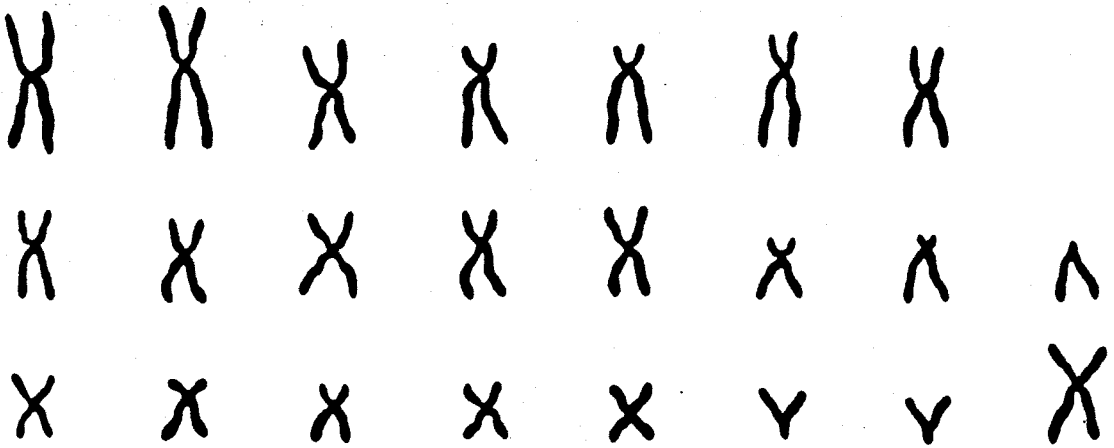
plastic sheet water soluble marker

PROCEDURE

1. Trace the chromosomes shown at the top of page 202 onto the plastic sheet using the wax pencil. Make sure that you trace the edges of the box around the chromosomes also. Be sure that you do not move the plastic sheet while you are tracing.

Tracing Chromosomes



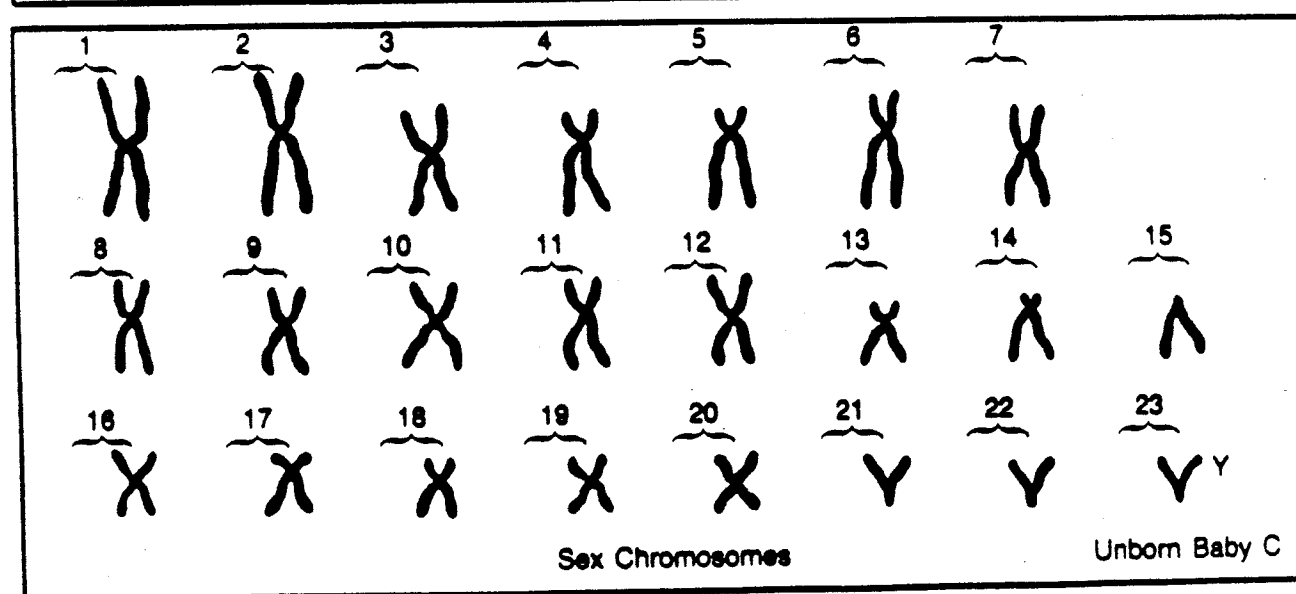
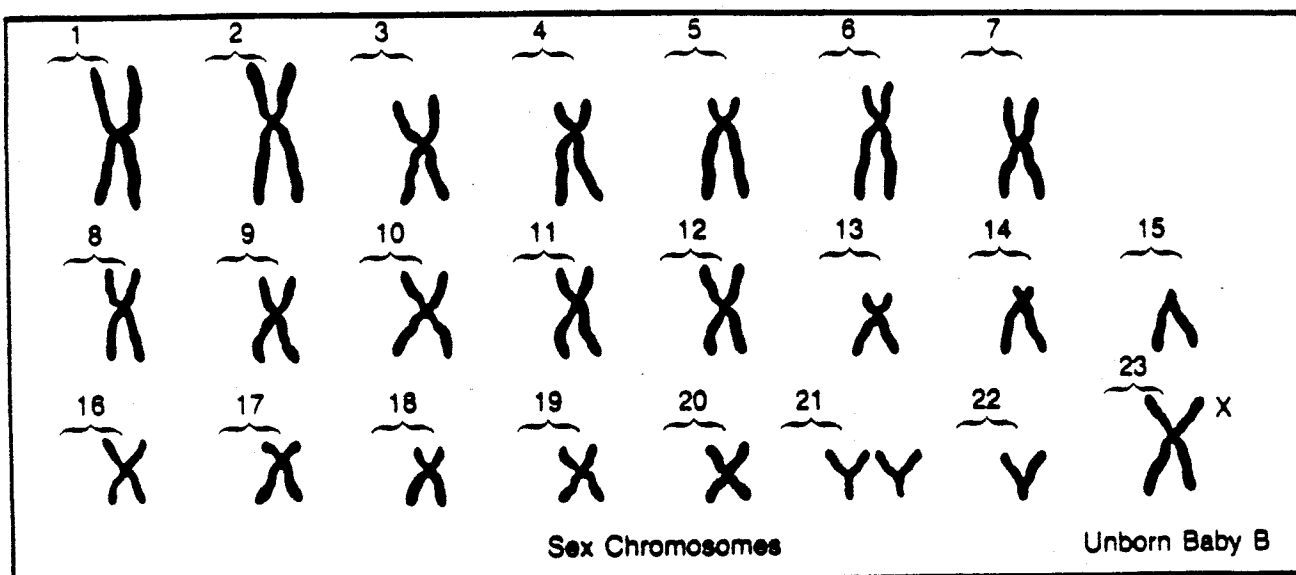
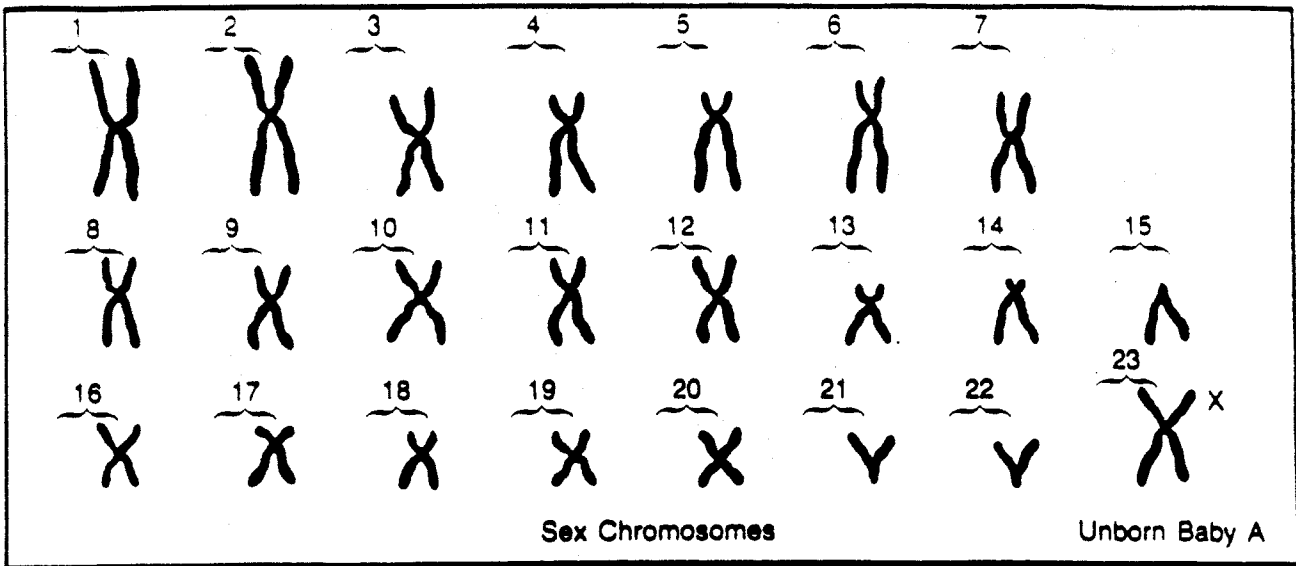


Chromosomes

2. Position the plastic over the diagrams of the chromosomes of Babies A, B, and C that follow. Be sure to match the boxes on the diagrams.
3. Complete column A of the following table as you examine the diagram for Baby A.
4. Repeat Steps 2 and 3 using the diagram on the next page for Baby B's chromosomes. Complete the part of the table below for Baby B.
5. Repeat Steps 2 and 3 using the diagram for Baby C's chromosomes. Complete the part of the table below for Baby C.

Observations of Chromosomes

Observations	Unborn baby		
	A	B	C
Total number of chromosomes			
Are chromosomes 1-22 in pairs? (If yes, skip next question).			
Which chromosomes (by number) are not in a pair?			
Number of pairs present			
Number of body chromosomes			
Sex chromosomes present			
Sex of unborn baby			
Could be normal baby			
Could be abnormal baby			



QUESTIONS

1. Which baby (babies) could be normal? _____
How can you tell? _____

2. Which baby (babies) could be abnormal? _____
How can you tell? _____

3. How did you know what the sexes of the unborn children were? _____

APPLICATION

When a child has an extra #21 chromosome, the child has a condition called Down syndrome (SIHN drohm). Syndrome means disease or signs of a disease. Down is the name of the person who discovered this disease. Which of the unborn children whose chromosomes you examined has Down Syndrome? _____

VOCABULARY

Fill in the blanks with the proper word or words.

1. Chromosomes that determine whether a baby will be male or female are called _____.
2. _____ means disease or signs of a disease.
3. A physical or mental problem present at birth is called a _____.
4. A person who has three #21 chromosomes has _____

5. What is meant by the word "physical" in the introduction? _____

