Name:	Group:	Date:

MULTIPLICATION AND DIVISION

STUDENT BOOK: Chapter 5, pp. 131-135

CONCEPTS: MITOSIS

MEIOSIS
METHOD: MODELLING

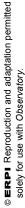
Cell division is an essential process for the perpetuation of species. Two types of division are involved: mitosis and meiosis. With one type, the cells multiply. With the other, they produce gametes. You will visualize these processes in this activity.

IDENTIFYING THE PROCESS TO MODEL

Before modelling mitosis and meiosis, you need to clearly understand the differences between the two types of cell division and the phases involved.

Read pp. 131–135 in your student book for help in answering questions 1–7.

1.	What is mitosis?
2.	What is a diploid cell?
3.	What is meiosis?
4.	What is a haploid cell?



Date:

PLANNING A MODEL

In this activity, you will model mitosis and meiosis (I and II) for an animal organism having three pairs of chromosomes, meaning that the parent cell has two copies of three different chromosomes (2n = 6).

- **7.** In the tables on the following pages:
 - a) Name each of the phases of mitosis and meiosis.
 - b) Describe briefly how you will represent the chromosomes for each phase.

Name:		Group: Date: _		
Description of	of mitosis			
Mitosis	Interphase	Indistinct chromosomes in cell nucleus		
Phase 1				
Dhara 0				
Phase 2				
Phase 3				
Phase 4				
Description of	of meiosis			
MEIOSIS I	Interphase	Indistinct chromosom in nucleus of parent c		
Phase 1				
Phase 2				
Phase 3				
Phase 4				



Description of meiosis (continued)

MEIOSIS II	Interphase	Indistinct chromosomes in nucleus of parent cell			
Phase 1					
Phase 2					
Phase 3	·				
Phase 4					
	8. Using pipe cleaners of different colours:a) Explain how you will model cell division.				

ame: _	me: Group:	Date:
b)	b) Explain what each pipe cleaner represents.	
an	 Make a list of the materials you will need to model mitosis and nand colour of pipe cleaners. Mitosis 	neiosis, including the number
•	•	
•	•	
•	•	
M∈ •	Meiosis I •	
•	•	
•	•	
•	•	
Me	Meiosis II	
•	•	
•	•	
•	•	
•	•	



Name:	Group:	Date:	

DESIGNING THE MODEL

- **10.** Create your models according to these instructions:
 - Write the name of each phase in the proper place.
 - Glue your structures (pipe cleaners) inside the lines.

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Model of mitosis	

Name	:	Group:	Date:				
	Model	of majosis					
	Model of meiosis						
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Name:	Group:	Date:	
VALIDATING THE MODEL			
11. Does your model improve your u	nderstanding of the process	es studied? Explain your answe	r.
12. How could you improve your mod	del?		