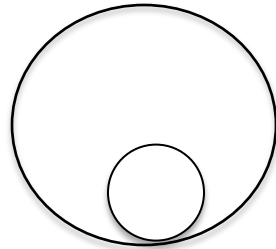
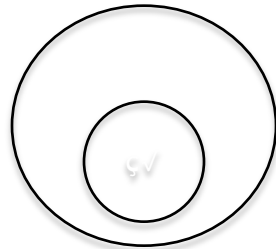


Interphase



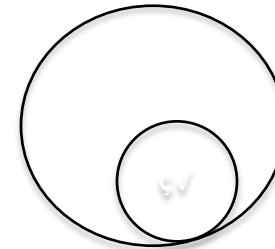
1. Growth, metabolism

Prophase

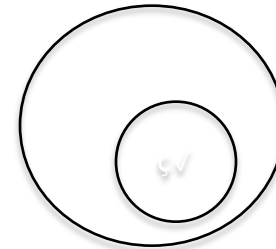


3. Chromosomes appear

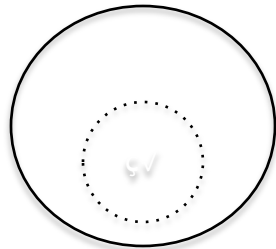
2. Chromosomes copied



4. Centrioles to poles

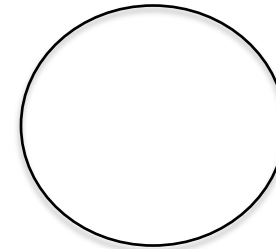


5. Nuclear Membrane dissolves

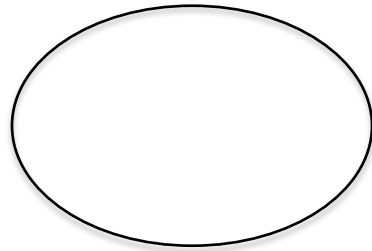


Metaphase

6. Chromatids to the middle

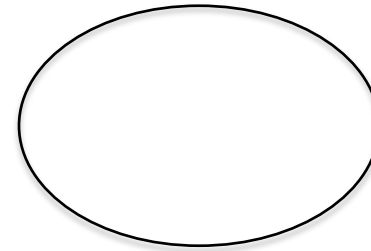


Anaphase

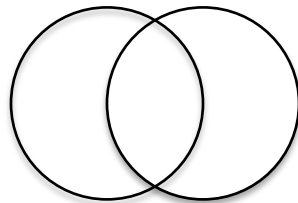


7. Chromatids move apart

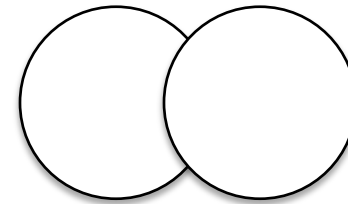
8. Spindles shrink



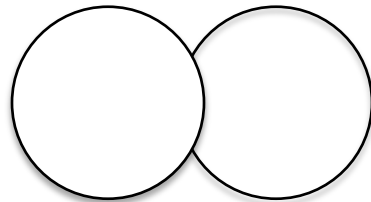
9. Chromatids to the poles



10. Spindles continue to shrink

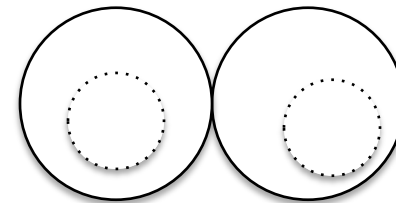


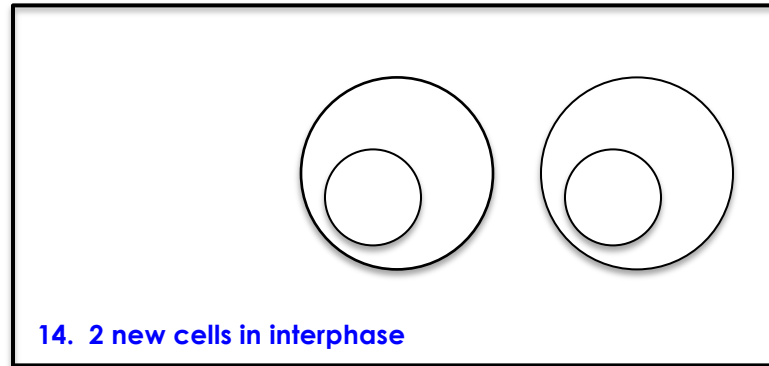
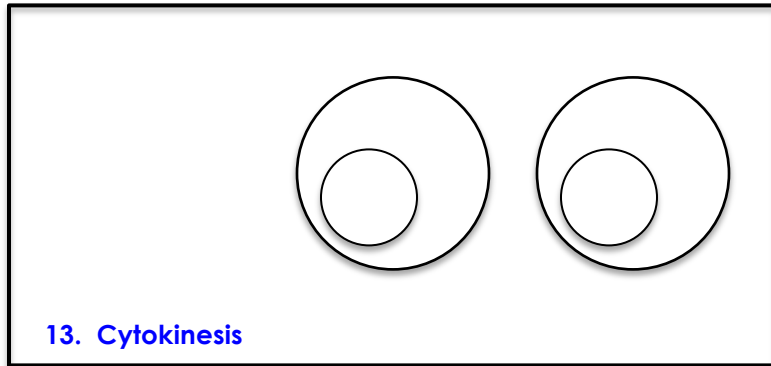
Telophase



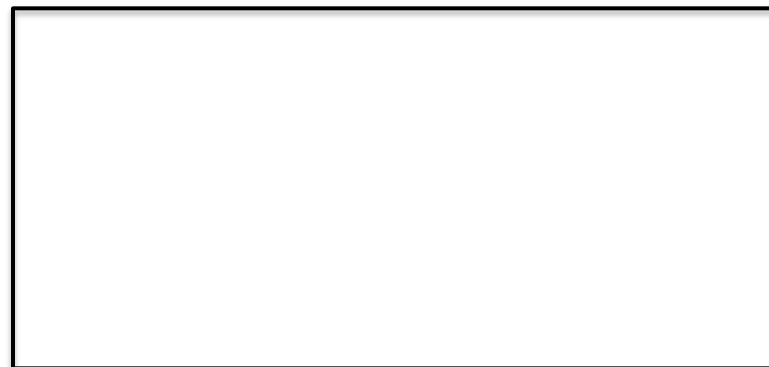
11. Cytoplasm pinches off

12. New Nuclear membranes form





Front Cover - Clearly Print Your Name



Back Cover - Design as you wish

STANDARDS:

16.9-12.SCI.KU.001	Student recalls scientific knowledge and uses scientific understanding to construct scientific explanations.
16.9-12.SCI.KU.003	Student critically analyses and evaluates information to make judgments supported by scientific understanding.
16.9-12.SCI.MI.002	Student analyses and interprets data.
16.9-12.SCI.CO.002	Student uses appropriate communication modes such as verbal (oral, written), visual (graphic, symbolic), technological, and written formats (laboratory reports, essays, presentations).

MITOSIS FLIP-BOOK DIRECTIONS

PART ONE: Select colors to represent the following [You will use these colors on each of the slides for your flip-book.]

Cytoplasm _____

Centrioles _____

Chromosomes/Chromatids: _____

Spindles _____

PART TWO: Color each cell slide.

Color in all of your cytoplasm. [A light color works best.]

Draw in the chromosomes/chromatids. [Please remember to draw in the correct number each time.]

Draw in the centrioles for each slide.

Draw in the spindles for the slides where they will be present.

[Hint: Slides that need some or full spindles are – 2, 3, 4, 5, 6, 7, 8, 9, and 10]

PART THREE: Design your front and back covers for your flip-book.

PART FOUR: Cut out each slide for your flip-book.

PART FIVE: Assemble your flip-book with a front cover, 14 slides in order, and a back cover.

MITOSIS FLIP-BOOK RUBRIC

POINTS POSSIBLE: **40**

REQUIRED FIELDS:

1. Six "mile-stone" slides correctly represented from notes.
2. Nine slides correctly representing transition between the six "mile-stone" slides.
3. Progression over time can be seen when the flip-book is used.
4. The correct cell parts are present and correctly colored for each slide.

RUBRIC:

Target from the Standards	Below Expectations	Approaching Expectations	Meeting Expectations	Exceeding Expectations	Not Attempted
16.9-12.SCI.KU.001 The student has six phases [mile-stones] from the notes represented correctly.	3 of the 6 reference slides are correctly represented. 2	4 of the 6 reference slides are correctly represented. 3	5 of the 6 reference slides are correctly represented. 4	6 of the reference slides are correctly represented. 5	
16.9-12.SCI.KU.003 The student has transitions for the slides between the six phases[mile-stones] found in the notes.	3 of the 9 transition slides are correctly represented 5	5 of the 9 transition slides are correctly represented 9	7 of the 9 transition slides are correctly represented 13	9 of the transition slides are correctly represented. 17	
16.9-12.SCI.MI.002 The student shows progression over time for the slides.	When used, the flip-book is able to show some of the mitosis process correctly 5	When used, the flip-book is able to show a partially correct mitosis process 6	When used, the flip-book is able to show a mostly correct mitosis process 7	When used, the flip-book shows a full mitosis process 8	
16.9-12.SCI.CO.002 The student shows the parts of the cell correctly in stated colors for all slides.	Many parts are missing from most of the slides for parts of the cell; most cell parts are not correctly represented 4	Some parts are missing from some slides for parts of the cell; cell parts are not correctly represented 6	Most of the parts of the cell are correctly represented for most of the slides 8	All of the parts of the cell are correctly represented for all of the slides 10	

POINTS EARNED: _____