Name: _____

Class: _____

WORKSHEET

14.1 Mitosis: Making new cells

Read pages 182–4 of *Human Perspectives Units 1 & 2* and fill in the missing words to complete the sentences below.

_____ occurs in a series of stages, or _____. _____ is the period between nuclear divisions.

In this phase, the DNA molecules form exact _____ of themselves, such that the quantity of DNA in the nucleus _____.

Prophase is the _____ phase of mitosis.

Two pairs of _____ become visible and they move to _____ ends or _____ of the cell.

The _____ threads become tightly coiled and can be seen as _____.

Each chromosome consists of two _____ which are joined at a point called the _____.

Draw a chromosome as it would look in this phase in the space below.

By the end of prophase, the _____ has developed, the _____ _____ has completely disappeared, and the _____ pairs migrate towards the _____ _____ of the cell.

During _____, the chromatid pairs line up on the equator; the _____ of each pair is attached to a _____ _____.

In anaphase, each pair of _____ separates at the _____.

The new _____ are then pulled apart towards opposite _____ of the _____.

In _____ , the two sets of _____ form groups at each pole of the cell.

A _____ _____ forms around each _____ and a _____ _____ appears in each new _____.

The cytoplasm is divided by a process called _____.

The result of mitosis and cytokinesis is the formation of two _____, each having the _____ number and _____ of _____ as the parent cell.

Mitosis flip books

You can demonstrate the whole mitotic process by producing a flip book of the phases. Use Figure 14.3 in the textbook to assist you. Complete each page to illustrate the changes that take place in a cell during cell division.

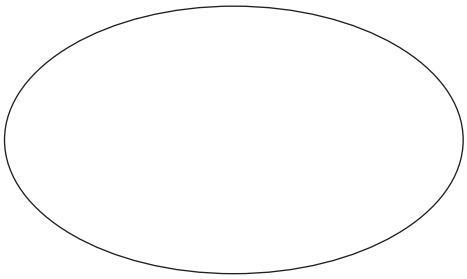
- The first oval (or ovals) in each phase should show the location of the organelles at that stage.
- Use the extra ovals to show the movement of organelles between stages.
- Once you have completed all the diagrams, carefully cut out each page, organise from first to last, and staple.
- Flip through your book to view cell division.

This activity has been adapted from www.sciencespot.net/Media/mitosisbook.pdf.

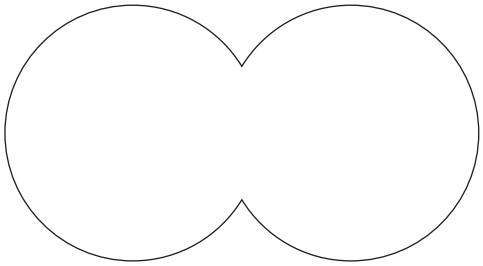
Diagram masters

Either make copies of the diagrams below or use them as templates.

Master for interphase through anaphase



Master for telophase



Master for cytokinesis