

The menstrual cycle

Subject area(s): Biology, Human Reproduction

Suggested grade level(s): Grade 9 (Manitoba)

Duration: 3-4 hours, includes time for Pipe Teaching

Standards/Goals:

Students will be able to...

- define the menstrual cycle.
- develop an understanding of the involvement of hormones and body organs with regards to the menstrual cycle.

Performance Objectives:

Upon successful completion of this lesson, students will be able to...

- use correct terminology to write a personal definition of the menstrual cycle.
- develop a labelled diagram of female reproductive anatomy.
- create a graph/diagram representing the cycle of hormones in the female reproductive cycle.
- identify influences of hormones on the female reproductive cycle.

Readiness of your students:

Students will have pre-read information regarding the menstrual cycle. See **Sources** for details.

Preparation/Materials:

The teacher will need ...

- previous contact with a Pipe Carrier so it can be arranged to have the teaching immediately following the lesson.
- access to a whiteboard/chalkboard or chart paper.
- a copy of the story, "A Woman's Part" taken from Arthur Solomon's *Song for the People*. (See **Sources**.)

The teacher should read the assigned materials and be ready to connect the Western Science to the Aboriginal Teachings. The teacher should also try to talk with an Elder or someone one following First Nations traditions to learn about the belief system surrounding the menstrual cycle or Moon Time.

Vocabulary:

Cervix: The lower entrance to the uterus that is connected to the vagina

Estrogen: A reproductive hormone

Fallopian Tubes/Oviducts: The passageway from the ovaries to the uterus. An egg travels from the ovary through the fallopian tube to the uterus.

Follicle stimulating hormone (FSH): A hormone that signals the ovaries to produce mature eggs.

Hormone: A chemical substance released by the endocrine system that acts like a messenger in the body. Hormones travel through the bloodstream and cause specific cells to respond in specific ways

Menstrual cycle: the monthly cycle of hormonal and physical changes in the female reproductive system.

Menstruation: The shedding of uterine lining from the uterus through the vagina.

Ovary: The organ within the female reproductive system which houses ova/eggs. Each woman has two ovaries.

Ovulation: The release of an ovum from the ovaries to the fallopian tubes where it travels to the uterus.

Ovum: The egg that travels from the ovaries to the uterus.

Pituitary gland: A member of the endocrine system found at the base of the brain. Hormones secreted by the pituitary gland are responsible for the onset of puberty.

Uterus: The organ of the female reproductive system in which a fetus can develop. Each month the uterus develops a special lining in which a fertilized egg can embed itself and grow. If no fertilized egg is present, the lining is shed and regrown in the next cycle.

Vagina: The canal through which sperm enter the uterus and a baby or uterine lining leave the uterus.

Delivery of Lesson

Motivation/Introduction: 10-15 minutes

I ask the students intriguing questions.

- How long do you think that sperm lasts inside of a woman after sexual intercourse?
- How long do you think that the egg stays alive to accept this possible connection?

The answers vary but I have yet to have any student know that the ovum/egg lives for 24 to 48 hours and that the male sperm can live inside the woman's body for up to 5 days! Most students are shocked that the sperm can live that long inside the female body! It gets them interested and sparks may question.

Presentation: 30-45 minutes

1. I ask the students to begin the lesson by writing a definition of menstrual cycle and what it means to them in their science log books.
2. As a large group, I present, in discussion format, the development, onset, and purpose of the menstrual cycle; as well as the role of the hormones in controlling this cycle. I use the white board to create diagrams and to write down the terminology.

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3. In small groups, I have the students identify times when they feel the influence of hormones over their moods or bodies. The male students are usually asked to identify times when they have noticed this in their mothers and sisters and to discuss how this makes them feel or ways they try to help their family member when they are feeling the effects of the hormones.
4. Finally, we regroup as a whole class and share situations that they have shared in their smaller groups. The teacher talks about the First Nations people and their belief system surrounding the woman's cycle – Moon time.

Discussion/Questions:

Before students begin their activity I have a group discussion about the myths they have heard about the menstrual cycle or about the female body. This helps prepare them for the activity.

Student Activity: 1-2 hours

Have the students create posters that illustrate the myths and the facts of the menstrual cycle. The students can make collage-style posters or create their own drawings/words.

Closure: 30 minutes (during student activity)

When the students are working on their posters I begin asking questions about what they know about pregnancy. During this time I make mental notes on what was discussed. I let them know that we are going to learn about pregnancy and about the development of the baby while it is in utero. The students are then mentally preparing themselves for the next lesson.

Sometimes, I have used a question box. I place it out while they are working on their activity and while we talk about pregnancy and baby development they are free to write questions down and put them in the box. I start my next lesson with these questions. Before the students leave they are assigned homework that requires them to draw the female reproductive system and label it before next class.

Follow-Up Lessons/Activities:

I have the students present their posters and verbally explain why they chose to do their posters the way they did.

Evaluation:

1. Knowledge will be demonstrated through traditional pencil/paper testing.
2. Learning log will be assessed on content and thoughtfulness.
3. Labelled diagram will be evaluated based on accuracy.
4. Poster will be assessed by peer evaluation method.

Making Connections

Cross-Curricular:

The teacher may integrate health, art and/or language arts by having the presentation of the posters part of their speaking and representing marks.

Cultural Connections:

1. The group discussions can be held in a circle – creating a teaching circle where everyone is equal and can contribute their knowledge.
2. The students can hear and/or participate in a Pipe Teaching
3. The students will listen to and follow along in reading, “The Woman’s Part” taken from Arthur Solomon’s *Songs for the People*.
4. Students can participate in a discussion that connects the teaching of the Pipe to Western Science.
5. Students can complete a compare and contrast frame for story and science connections
6. Students can could also do research on different ethnic belief systems or myths surrounding the menstrual cycle

Computers & Other Technologies:

Students can ...

1. create posters using computer-based illustration or photo manipulation software such as Illustrator, Photoshop, Publisher etc.
2. research the menstrual cycle on-line using the sources below.
3. use word processing software to compare and contrast traditional and scientific views of the menstrual cycle and its function.
4. use the Internet to research different cultural beliefs regarding the menstrual cycle.

Teachers can...

1. develop online assessment tools using freely available software from Hot Potatoes, <http://web.uvic.ca/hrd/halfbaked/>
2. download the attached PDF diagram of the female reproductive cycle for use in class and assessment
3. encourage students to maintain electronic science journals.

Sources:

Books

1. Cara Widrick, Cultural Advisor, 204-785-9331
2. *SciencePower 9*, 2003, McGraw-Hill Ryerson, ISBN 0-07-560361-6
<http://www.mcgrawhill.ca/school/booksites/sciencepower+9/index.php>
Accompanying Computerized Assessment Bank and videos available
3. *Songs for the People: Teachings on the Natural Way*, Arthur Solomon, 1990, NC Press Limited, Toronto, ISBN 1-55021-058-0
4. *Success for All Learners: A Handbook on Differentiating Instruction*, 1996, Manitoba Education & Training, ISBN 80320
<http://www.mtbb.mb.ca/catalogue/en>

On-Line Sources

1. Female reproductive system
<http://hes.ucf.k12.pa.us/gclaypo/repro/femrepr.html>
2. The female reproductive system
<http://www.blc.arizona.edu/courses/181gh/rick/reproduction/female.html>
3. Hormones/female Cyclicity
<http://womenstudy.cla.umn.edu/courses/3202/lesson6.html>
4. Human reproduction (includes some interactive activities)
<http://www.learn.co.uk/default.asp?WCI=Unit&WCU=1715>

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