Part 10 Endocrine System

Name:

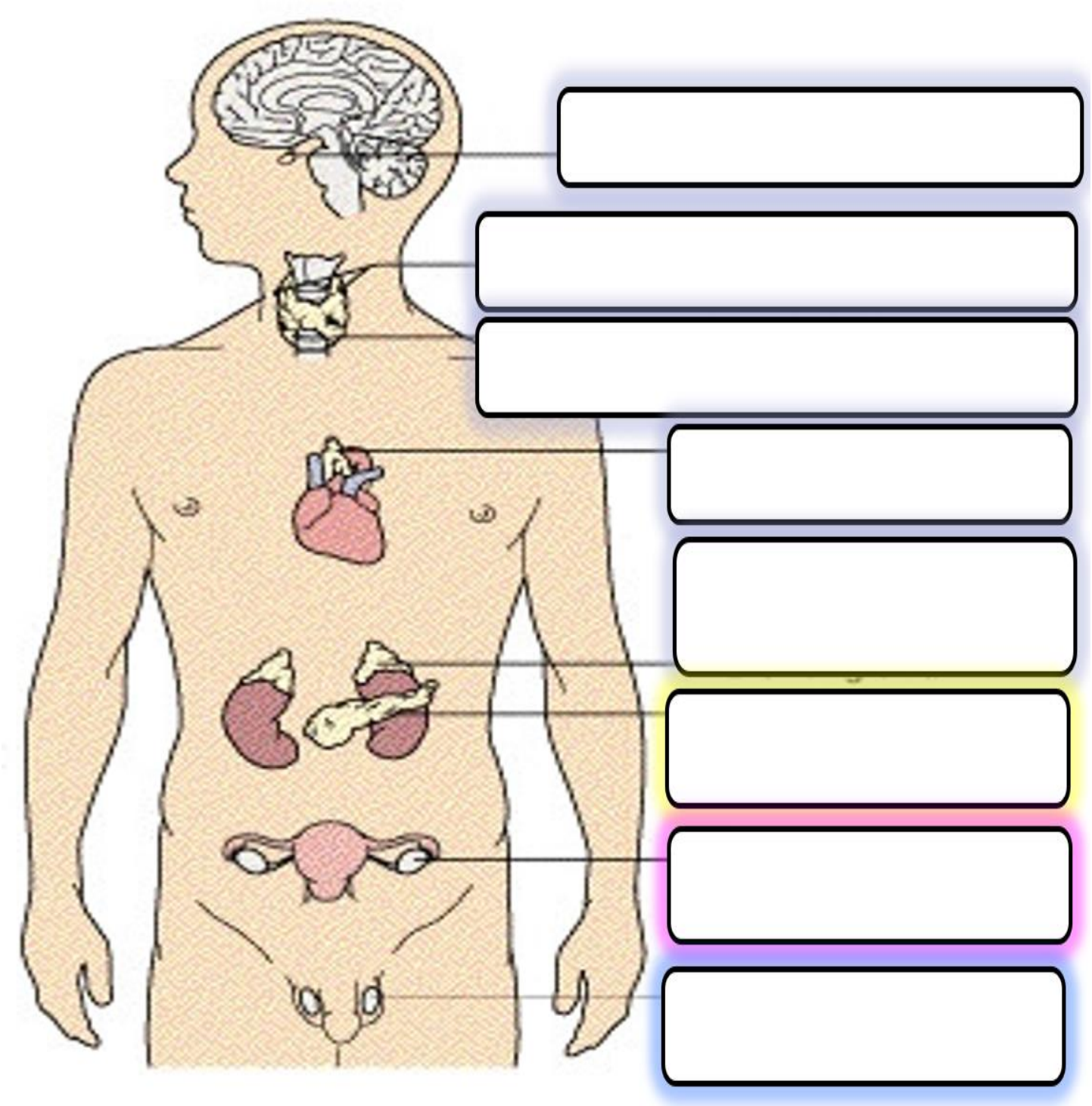
Part 10 Lesson 1The Endocrine System

The endocrine system is a system of _____ that release _____messages into your body.

Nervous and Endocrine both regulate the body.

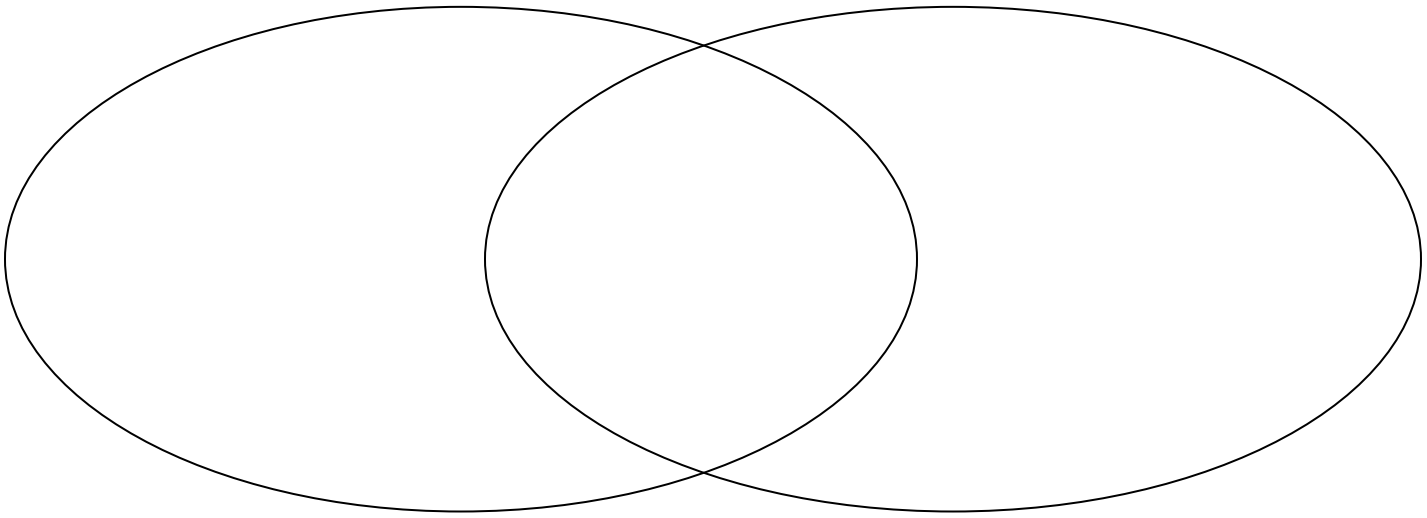
Nervous system sends _____ signals.

The endocrine sends chemical messages in _____.



◊ How are the nervous system, and endocrine system similar and different?

Different Similar Different



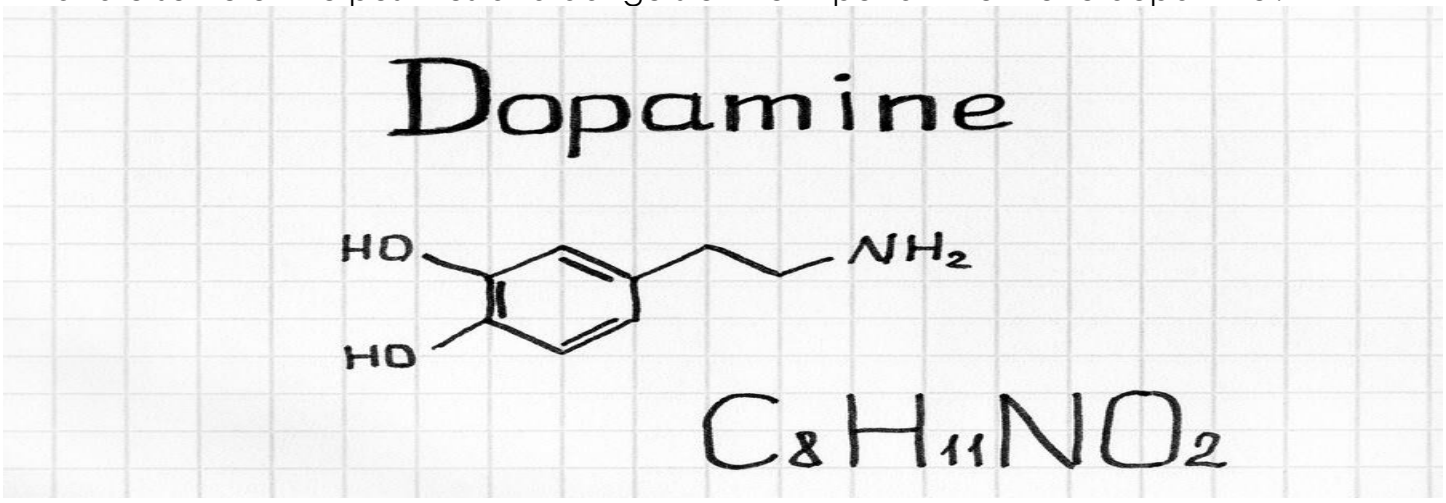
Nervous System Endocrine System

_____: A cell, a group of cells, or an organ that produces a secretion for use elsewhere in the body.

_____: A chemical substance produced in the body that controls and regulates the activity of certain cells or organs.

Some activities in the body… Growth Sexual development Reproductive cycle Digestion Sleep Hair growth Hunger	• Some important hormones – Insulin – Testosterone – Estrogen – Adrenaline • epinephrine – Dopamine – Melatonin – Thyroxine

What are some of the positives and dangers of the important hormone dopamine?



Part 10 Lesson 2 Puberty

Exocrine Glands: Give off _____ through _____ (tubes) to organs.
These don't produce _____
Produce _____, sweat, oil, digestive juices, saliva

_____: "The Boss" At the base of the brain and regulates the other endocrine glands.

_____ Gland: Communicates to hypothalamus (neurons). Size of pea.
Controls blood pressure, growth, metabolism

Metabolism: Chemical _____ that happen in living organisms to maintain life.

_____: Responsible for development of _____ system.

_____: Controls how quickly the body uses energy, makes proteins, and controls how sensitive the body should be to other hormones.

- _____thyroids release hormones that controls calcium levels in body for nerves and muscles.

_____: Produces adrenaline, part of emergency action plan, puts you on high alert.

_____: Produces insulin, which keeps sugar (glucose) in blood under control.
Helps body absorb _____ and use it for energy.
Turns excess sugar into a storage molecule called _____.
_____: Levels of sugar in ones blood is too high.

_____ and _____: Produce sex hormones.
Male: _____
Female: _____

Puberty Reading Questions to answer for Boys	Puberty Reading Questions to answer for Girls
Questions: Please answer the 5 questions below. #1) Name three physical changes that can happen to boys during puberty? #2) Name a few things a boy can do about these new changes? #3) Does everyone change at the same time? Explain? #4) Make up a relevant question and answer it. #5) How does hitting puberty change your emotions?	Questions: Please answer the questions below. #1) Name three physical changes that happen to girls during puberty? #2) Name a few emotional changes that may happen during puberty? #3) Why do you get a menstrual cycle? #4) Name a few things that can occur during your menstrual cycle in your body? #5) Make up a relevant question and answer it.

Puberty Reading

Part 10 Lesson 3 Endocrine Wrap-Up

Body Stability: The presence of an abnormally large amount of any hormone or other substance will trigger a gland to secrete a _____hormone.
This keeps your body in chemical balance.

Some hormone levels change in your body over the course of your life such as the sex hormones testosterone and estrogen.

◊ Please name the glands in the Endocrine System

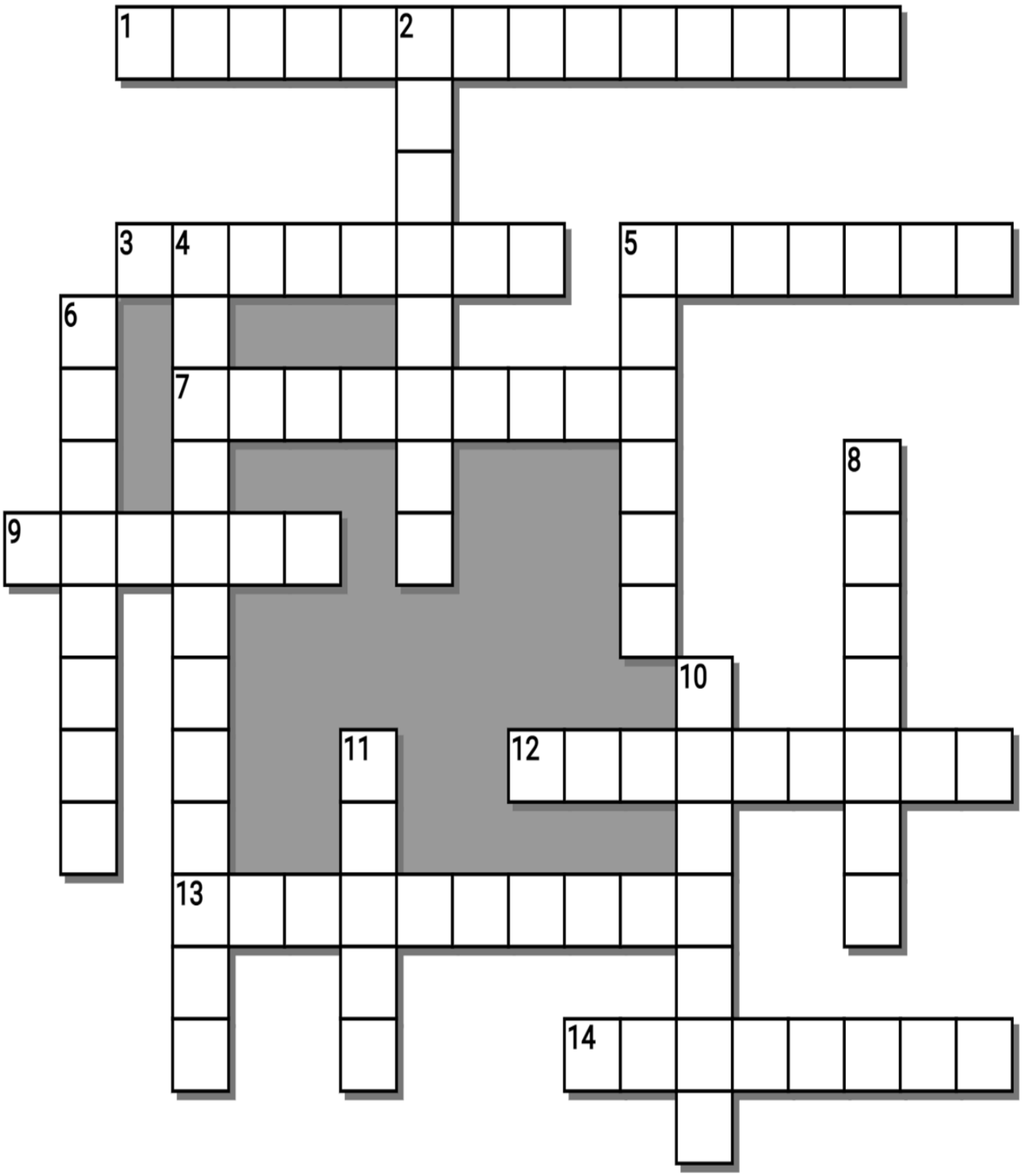
_____: Controls how quickly the body uses energy, makes proteins, and controls how sensitive the body should be to other hormones.
_____: Communicates to hypothalamus (neurons). Size of pea. Controls blood pressure, growth, metabolism.
_____: Responsible for development of immune system.
_____: Produces adrenaline, part of emergency action plan, puts you on high alert.
_____: Produces insulin, which keeps sugar (glucose) in blood under control.
_____ and _____: Produce sex hormones.

Across

1. Body Stability: The presence of an abnormally large amount of any hormone or other substance will trigger a gland to secrete a _____ hormone. This keeps your body in chemical balance.
3. The endocrine sends _____ messages in blood.
5. Controls how quickly the body uses energy, makes proteins, and controls how sensitive the body should be to other hormones.
7. _____ Gland: Communicates to hypothalamus (neurons). Size of pea. Controls blood pressure, growth, metabolism
9. Ovaries and _____: Produce sex hormones.
12. The _____ system is a system of glands that release chemical messages into your body.
13. Chemical reactions that happen in living organisms to maintain life.
14. Produces insulin, which keeps sugar (glucose) in blood under control. Helps body absorb sugar and use it for energy. Turns excess sugar into a storage molecule called glycogen. Diabetes: Levels of sugar in ones blood is too high

Down

2. _____ Glands: Give off chemicals through ducts (tubes) to organs. These don't produce hormones Produce tears, sweat, oil, digestive juices, saliva
4. "The Boss" At the base of the brain and regulates the other endocrine glands.
5. Responsible for development of immune system.
6. Produces adrenaline, part of emergency action plan, puts you on high alert.
8. _____ and testes: Produce sex hormones.
10. A chemical substance produced in the body that controls and regulates the activity of certain cells or organs.
11. A cell, a group of cells, or an organ that produces a secretion for use elsewhere in the body.



----------teacher can remove word bank to make puzzle more challenging----------

Possible Answers

ADRENALS, EXOCRINE, GLAND, HORMONE, HYPOTHALAMUS, METABOLISM, OVARIES, PANCREAS, PITUITARY, TESTES, THYMUS, THYROID, CHEMICAL, COUNTERBALANCE, ENDOCRINE

Part 10 Lesson 4 The Reproductive System

Part 10 Lesson 4

Sugar Babies Responsibility Sheet Names_____ and _____

Name of Child: _____ _____ _____ ____

You are required to carry and nurture a bag of sugar throughout the day for one week. You must never leave the bag of sugar unsupervised. During other classes, the bag of sugar naps next to your seat or at your desk. Your teacher can decide to have group naps. The bag of sugar is never placed in a locker or backpack. Treat the bag of sugar like a child, it should be given attention / love, changed, clothed, and feed throughout the day.

Babies found unattended, unclothed, unloved, or physically harmed will result in an immediate removal and will receive a zero. There aren't any do-overs in this project as neglect has lasting effects.

I have read the above. Date:_____ Signed:_____ _____

Schedule of Care giving

Blocks	Monday	Tuesday	Wednesday	Thursday	Friday
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
Who takes home?					

Please provide a statement that you are ready to take on this responsibility.

_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____

The _____System: Produces, stores, nourishes, and releases sex cells

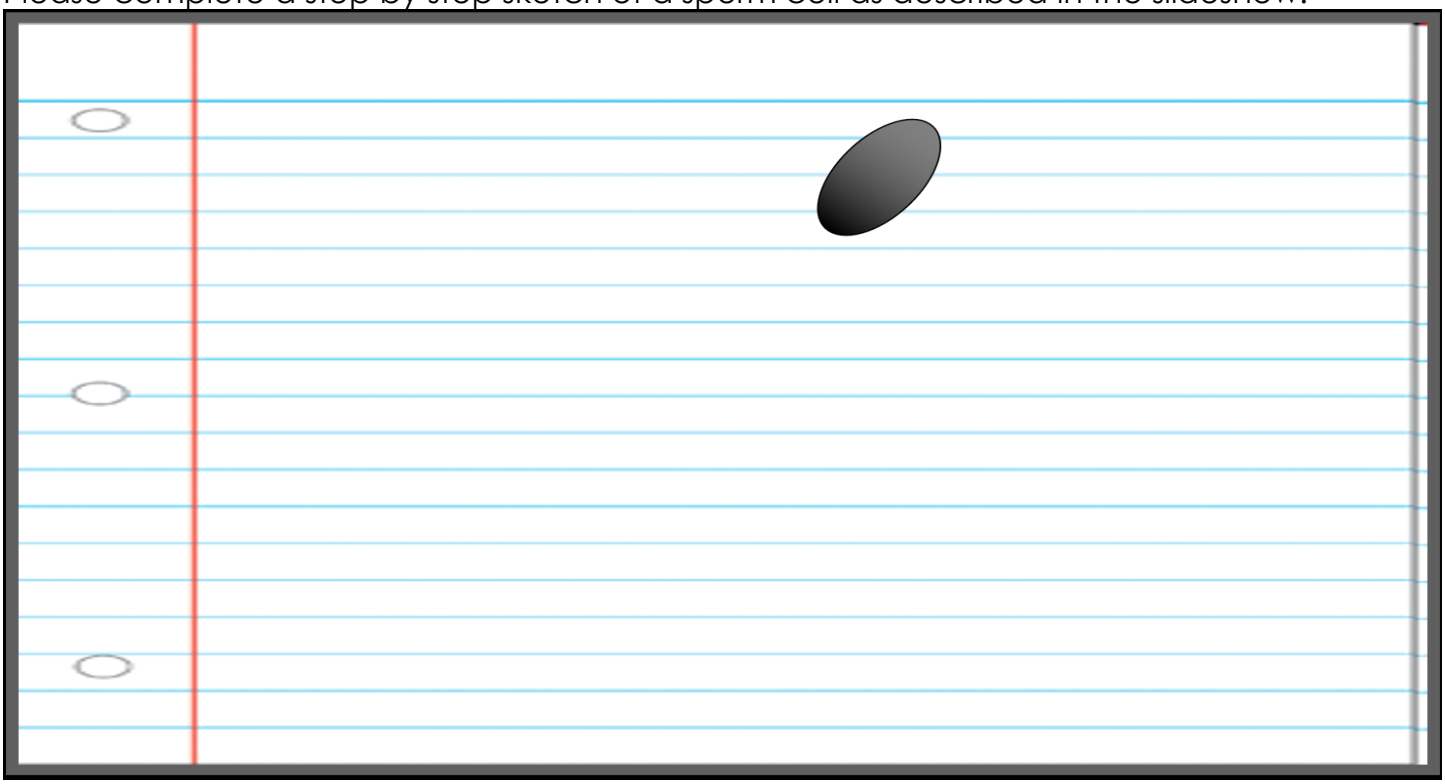
Egg (Ovum): _____ sex cell.

Sperm: _____ sex cell (gamete)

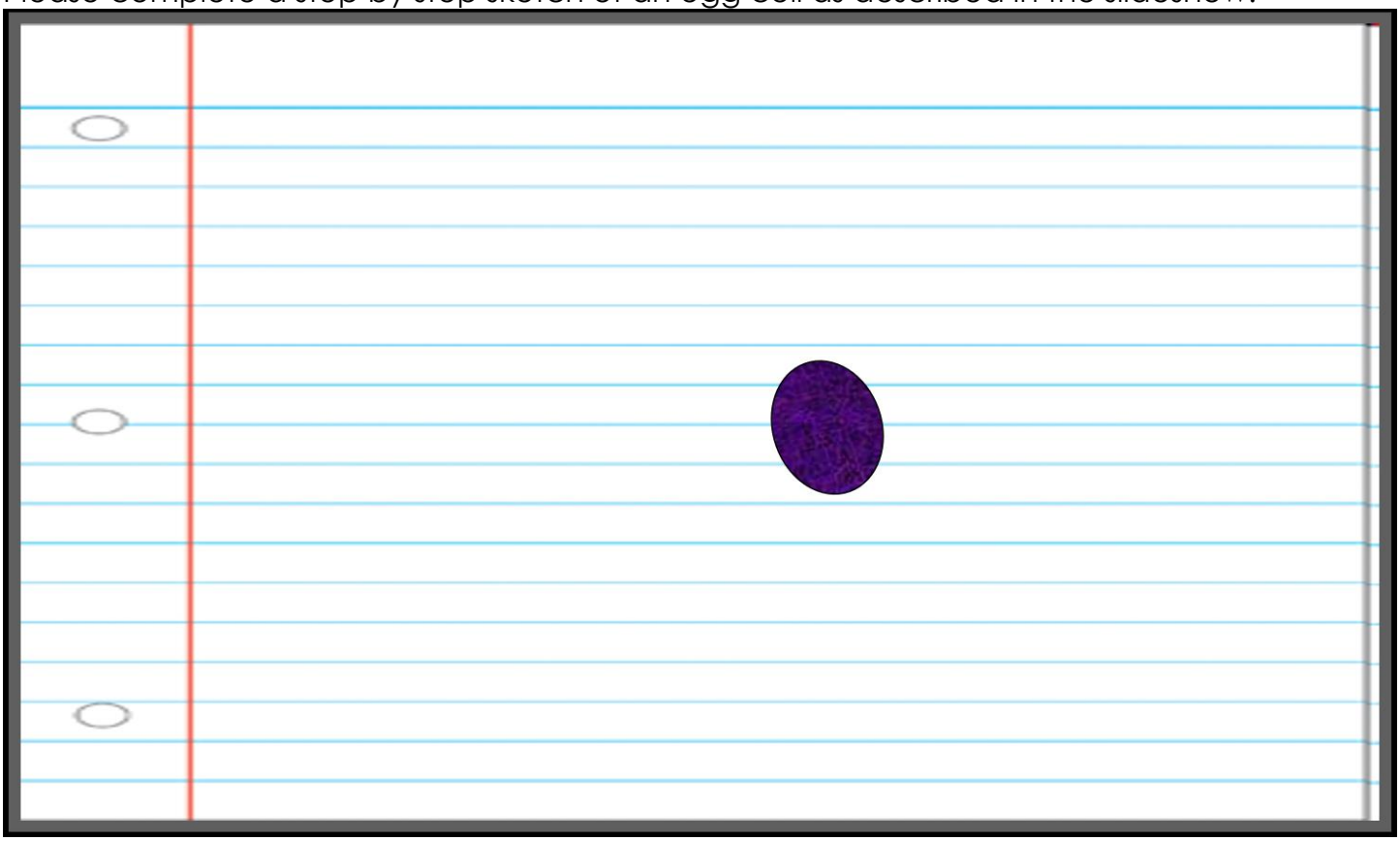
Fertilization: The joining of the _____ and the _____.

- The sperm and egg contain genetic information that will allow this one cell to multiply into trillions.

Please complete a step by step sketch of a sperm cell as described in the slideshow.



Please complete a step by step sketch of an egg cell as described in the slideshow.



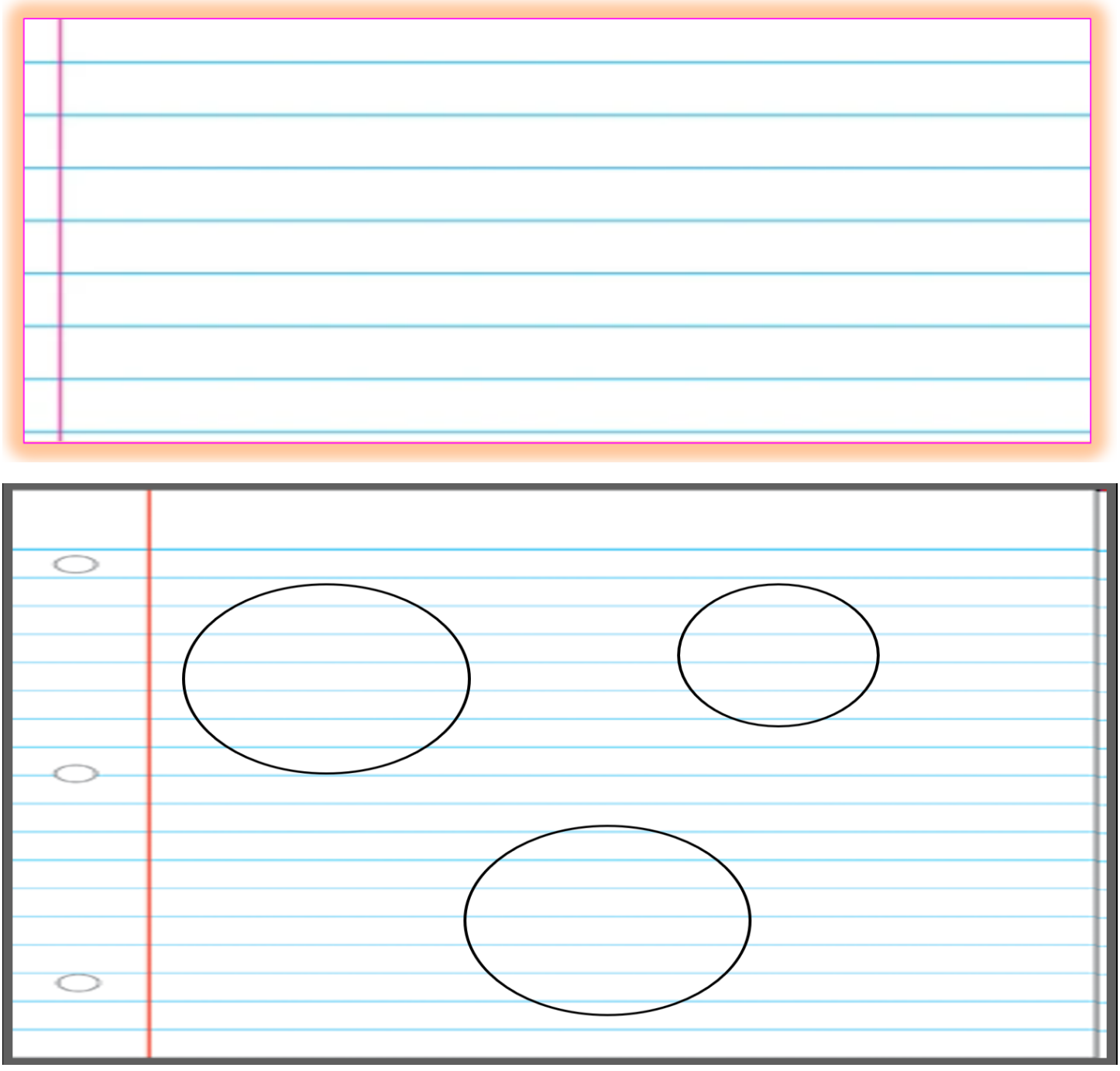
Sex Cells: The sperm (male), Egg (Female)

The Egg: a _____female reproductive cell or gamete.

- Much larger than the sperm
- At birth, there are approximately 1 million eggs; and by the time of puberty, only about 300,000 remain

All of the cells in our body except for our sex cells have 46 chromosomes.

- Our sex cells have 23. Why?



Name the number of chromosomes in each human cells below?

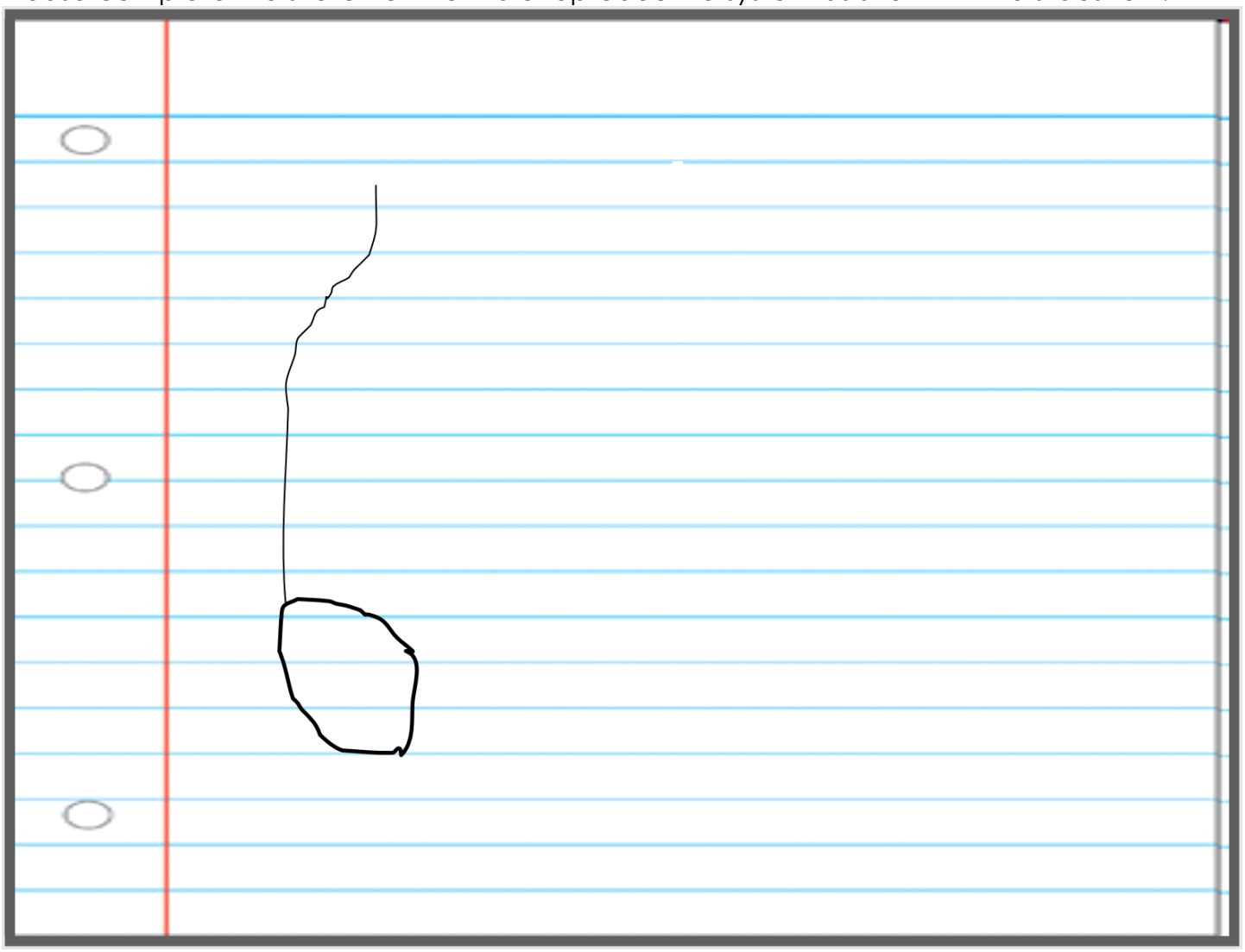
Brain Cell	Muscle Cell	Egg Cell	Liver Cell
Heart Cell	Nerve Cell	Skin Cell	Sperm Cell

Part 10 Lesson 5 Male Reproductive System

Fertilization: The process of fertilizing an egg.

- The fusion of male and female gametes to form a _____.

Please complete the sketch of the male reproductive system as shown in the slideshow.



_____: A membranous sac in humans and other animals, in which urine is collected for excretion

_____: This is the tube connecting the testes with the urethra.

_____: Small tubular glands that are near the prostate. The primary function involves the production of fluid that makes up a significant percentage of semen.

_____: This is the duct for the transfer of sperm during copulation.

_____: This is either of the two oval organs that produce sperm in men.

_____: This is the duct by which urine is conveyed out of the body from the bladder.

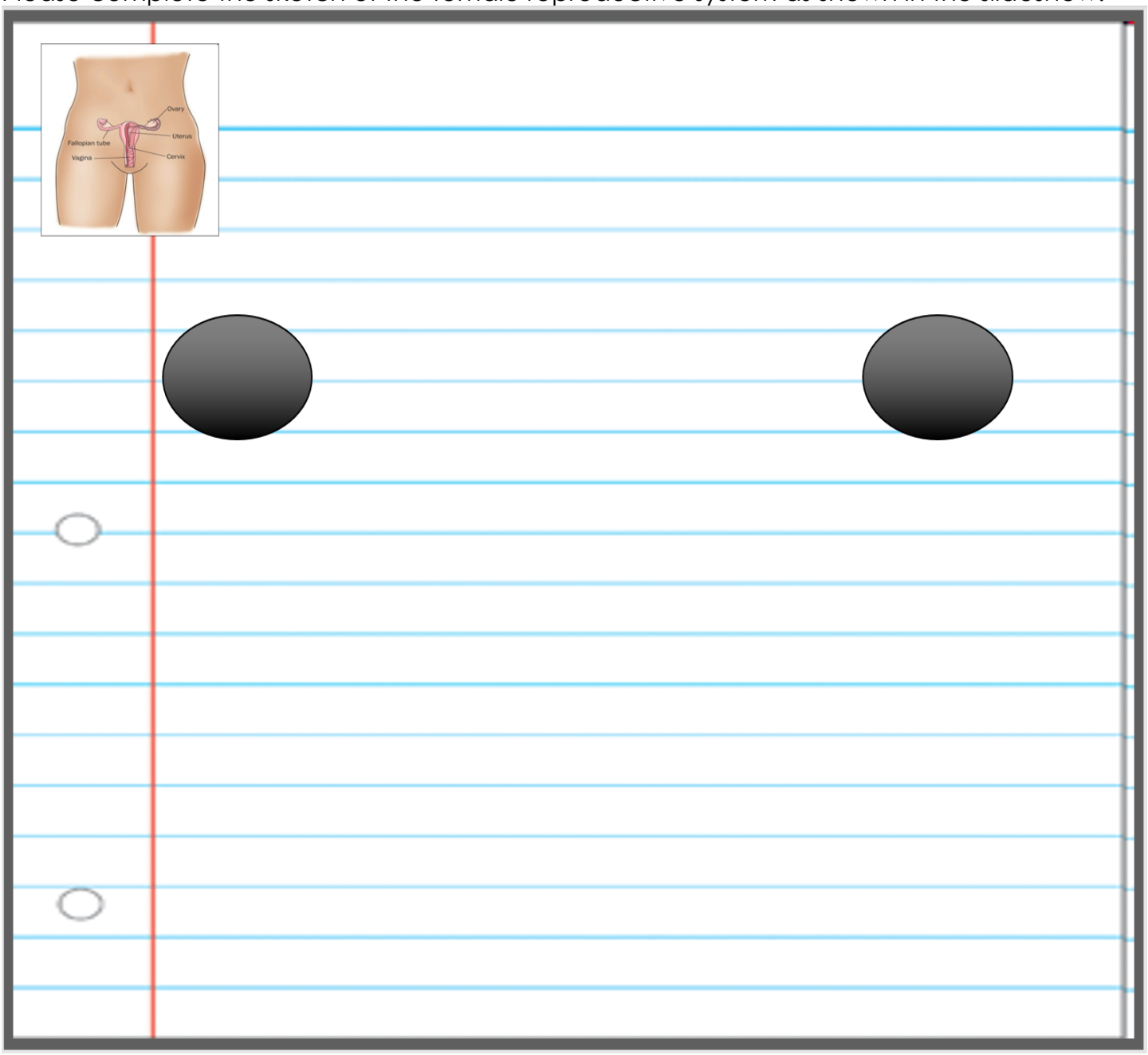
_____: This is a highly convoluted duct behind the testis, along which sperm passes to the vas deferens.

_____: This is a firm partly muscular chestnut sized gland in males at the neck of the urethra; produces a viscid secretion that is the fluid part of semen.

Part 10 Lesson 6 The Female Reproductive System

Female Reproductive System: The primary female reproductive organs are the ovaries.

Please complete the sketch of the female reproductive system as shown in the slideshow.



_____: Located between the vagina and uterus, it serves as a passageway for menstrual blood on the way out, and semen on the way in. (During childbirth, the cervix slowly thins and opens, allowing the baby to move from the uterus and into the vaginal canal.)

_____: A female reproductive organ in which ova or eggs are produced.

_____: This is a muscular organ, containing and nourishing the young prior to birth.

_____: These transport the egg from the ovary to the uterus (the womb).

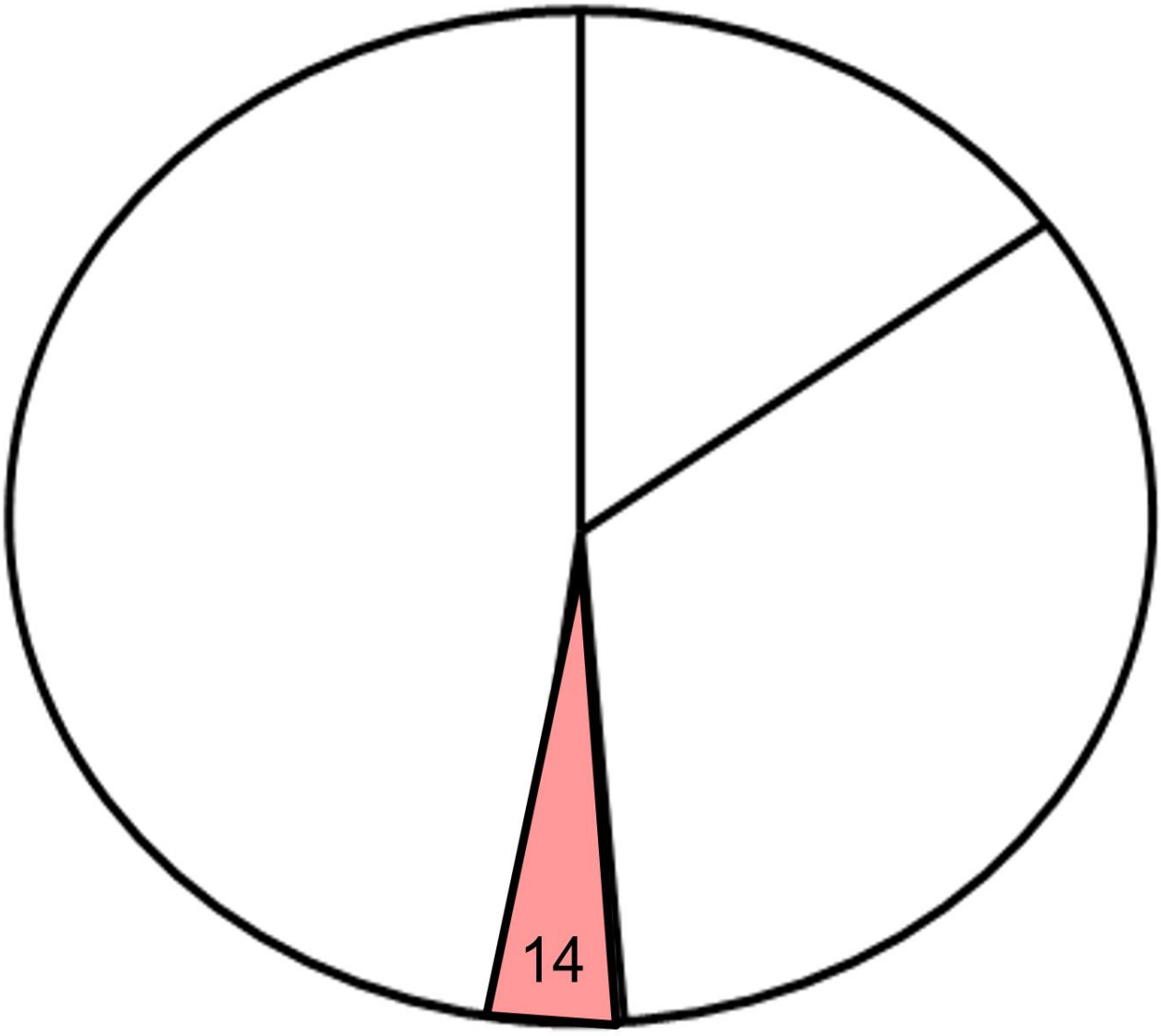
_____: Muscular tube leading from the external genitals to the cervix of the uterus.

_____: This is the mucous membrane lining the uterus, which thickens during the menstrual cycle in preparation for possible implantation of an embryo.

Part 10 Lesson 7 The Menstrual Cycle

The _____ Cycle: A series of changes a woman's body goes through to prepare for a pregnancy.

Please complete the diagram of the menstrual cycle as described in the slideshow.



Part 10 Lesson 8 Birth, Fetal Alcohol, Smoking while Pregnant

An _____ is the early stage of development of a multicellular organism. In general, in organisms that reproduce sexually, embryonic development is the part of the life cycle that begins just after fertilization and continues through the formation of body structures, such as tissues and organs.

A membrane called the _____ sac surrounds the embryo to cushion and protect it.

_____: A diagnostic medical image created using ultrasound echo (sonographic), equipment.

The _____: Organ that connects the developing fetus to the uterine wall.
Allows nutrient uptake
Eliminates waste
Gas exchange via the mother's blood supply

_____cord: a flexible cordlike structure containing blood vessels and attaching a human or other mammalian fetus to the placenta during gestation.

Caesarean Section:
Sometimes called a _____-section.
Surgical procedure in which incisions are made through a mother's _____, and uterus to deliver one or more babies.

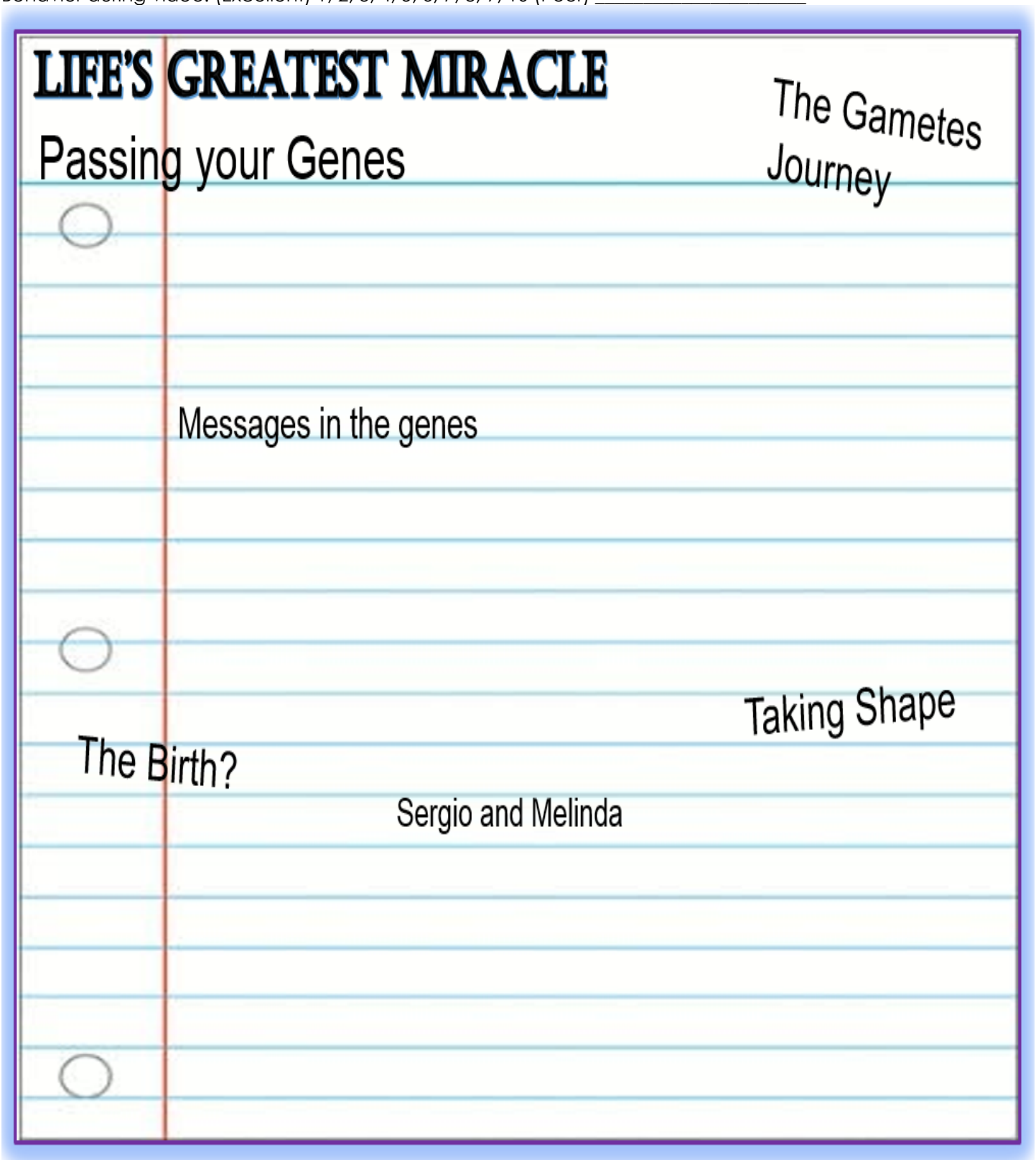
The growing fetus gets all of its nutrients directly from its _____ supply.
Smoking, drinking alcohol, and exposing the baby to any dangerous drugs can have severe consequences to the developing fetus.

What are some of the dangers of smoking and drinking while pregnant?

Part 10 Lesson 9 Wrap-Up and Miracle of Life / Sugar Babies

http://www.pbs.org/wgbh/nova/body/life-greatest-miracle.html

Please watch the miracle of life and include some information about the video in the boxes below. Feel free to draw, bullet list, and write. (PG-13 if possible)
Behavior during video: (Excellent) 1, 2, 3, 4, 5, 6, 7, 8, 9, 10 (Poor) _____



Please answer the questions below about the Sugar Baby Project

On a scale of 1-10 (Ten being the most) how difficult was this experience?

What were the best parts, and what were the difficult parts of this assignment?

Describe your relationship with your partner during this experience. What were your roles?

Has this experience changed your view of having children?

- Remember, this was only bags of sugar and not real children that require your constant love and attention…and $

Teacher Comments:

Across

1. _____ Section: Surgical procedure in which incisions are made through a mother's abdomen, and uterus to deliver one or more babies.
2. The joining of the egg and the sperm.
4. _____ cord: Flexible cordlike structure containing blood vessels and attaching a human or other mammalian fetus to the placenta during gestation.
6. This is the duct for the transfer of sperm during copulation.
8. An _____ is the early stage of development of a multicellular organism.
10. This is the mucous membrane lining the uterus, which thickens during the menstrual cycle in preparation for possible implantation of an embryo.
12. Womb or _____: This is a muscular organ, containing and nourishing the young prior to birth.
13. This is a highly convoluted duct behind the testis, along which sperm passes to the vas deferens.
16. Male sex cell (gamete)
17. Egg (_____): Female sex cell
18. The Egg: a h_____ female reproductive cell or gamete.
19. This is the duct by which urine is conveyed out of the body from the bladder
22. This is the tube connecting the testes with the urethra.
25. Muscular tube leading from the external genitals to the cervix of the uterus.
26. Don't drink _____ or smoke while pregnant

Down

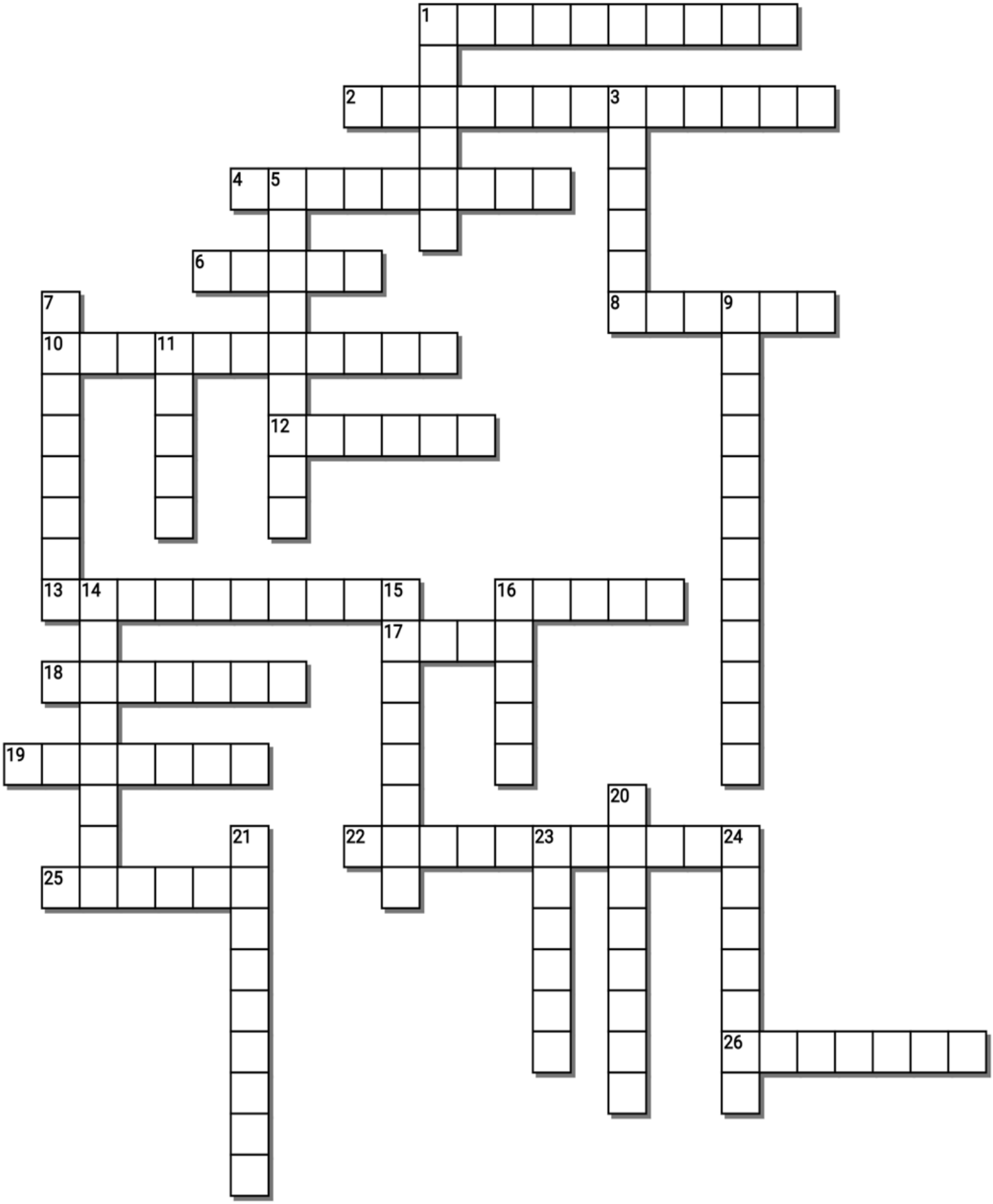
1. Located between the vagina and uterus, it serves as a passageway for menstrual blood on the way out, and semen on the way in. (During childbirth, the cervix slowly thins and opens, allowing the baby to move from the uterus and into the vaginal canal.)
3. The fusion of male and female gametes to form a _____
5. The _____ Cycle: A series of changes a woman's body goes through to prepare for a pregnancy.
7. This is the duct for the transfer of sperm during copulation.
9. The _____ System: Produces, stores, nourishes, and releases sex cells.
11. A female reproductive organ in which ova or eggs are produced.
14. Organ that connects the developing fetus to the uterine wall.
15. A diagnostic medical image created using ultrasound echo (sonographic), equipment.
16. Don't drink alcohol or _____ while pregnant.
20. This is a firm partly muscular chestnut sized gland in males at the neck of the urethra; produces a viscid secretion that is the fluid part of semen
21. _____ Tubes: These transport the egg from the ovary to the uterus (the womb).
23. _____ Reproductive System: The primary reproductive organs are the ovaries.
24. _____ Vesicle" Small tubular glands that are near the prostate. The primary function involves the production of fluid that makes up a significant percentage of semen.

----------teacher can remove this word bank to make puzzle more challenging----------

Possible Answers

CAESCAREAN, CERVIX, EMBRYO, ENDOMETRIUM, EPIDIDYMUS, FALLOPIAN, FEMALE , FERTILIZATION, HAPLOID, MENSTRUAL, OVARY, OVUM, PENIS, PLACENTA, PROSTATE, REPRODUCTIVE, SEMINAL, SMOKE, SONOGRAM, SPERM, TESTICLE, UMBILICAL, URETHRA, UTERUS, VAGINA, VASDEFERENS, ALCOHOL , ZYGOTE

Note: #7 Down should be testicle, and #6 Across should be penis. Oops, go with the flow.



Part 10 Review Game

Name

1-20 = 5 pts Lesson 10 Review Game

*20-*25 * = Bonus + 1 pt,

(Secretly write owl in correct space +1 pt) Score ____ / 100

Final Question = 5 pt wager

IT's UNITED	HANGING TOUGH	MIGHTY APHRODITE	TEST OVER	FAMILY BABIES Bonus round 1 pt each
1)	6)	11)	16)	*21)
2)	7)	12)	17)	*22)
3)	8)	13)	18)	*23)
4)	9)	14)	19)	*24)
5)	10)	15)	20)	*25)

Final Question Wager _____/5 Answer: _____

_____

Part 10 Endocrine System

Name:

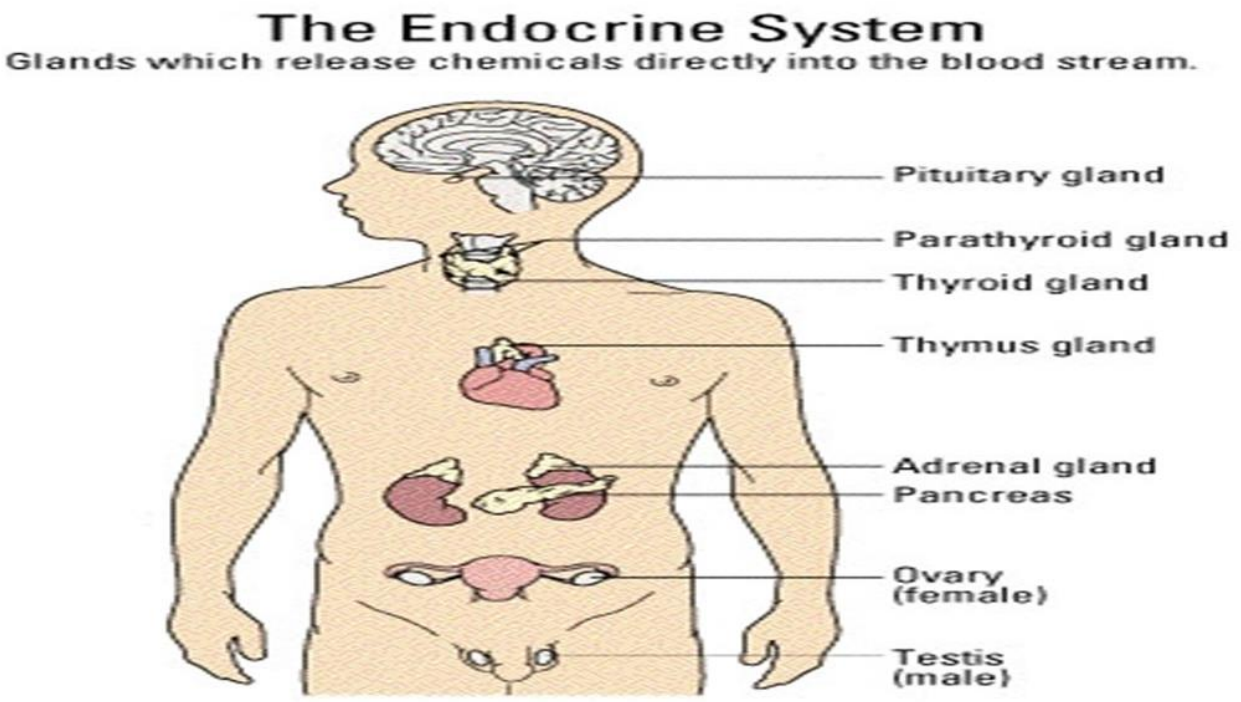
Part 10 Lesson 1The Endocrine System

The endocrine system is a system of glands that release chemical messages into your body.

Nervous and Endocrine both regulate the body.

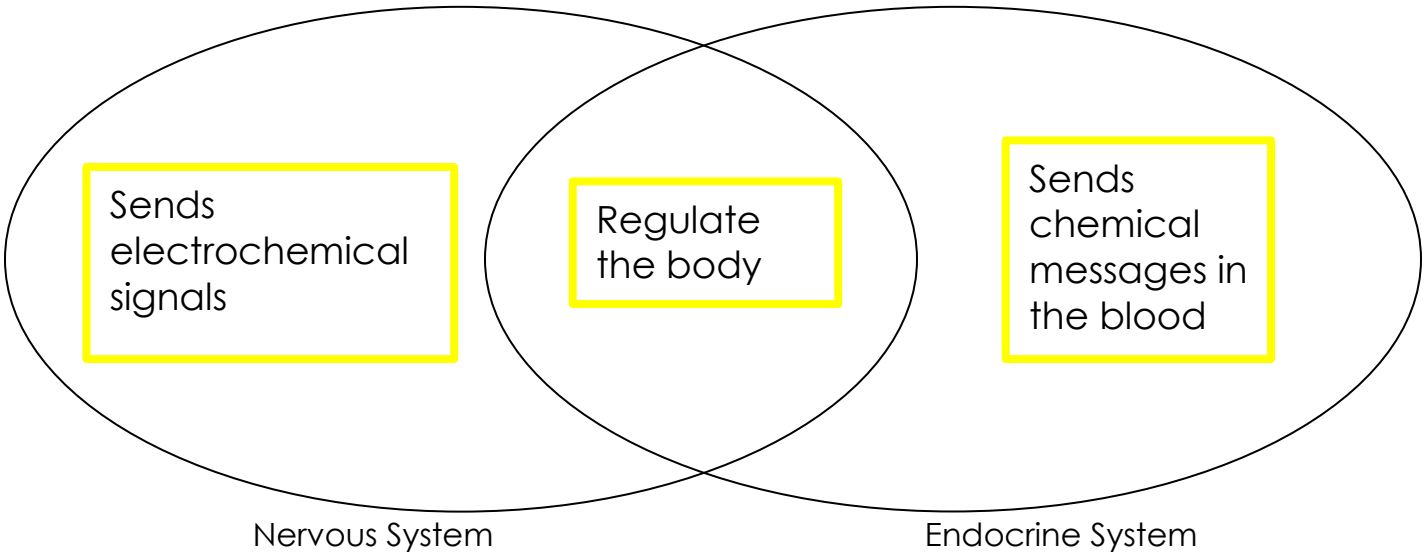
Nervous system sends electrochemical signals.

The endocrine sends chemical messages in blood.



◊ How are the nervous system, and endocrine system similar and different?

Different | Similar | Different



Gland: A cell, a group of cells, or an organ that produces a secretion for use elsewhere in the body.

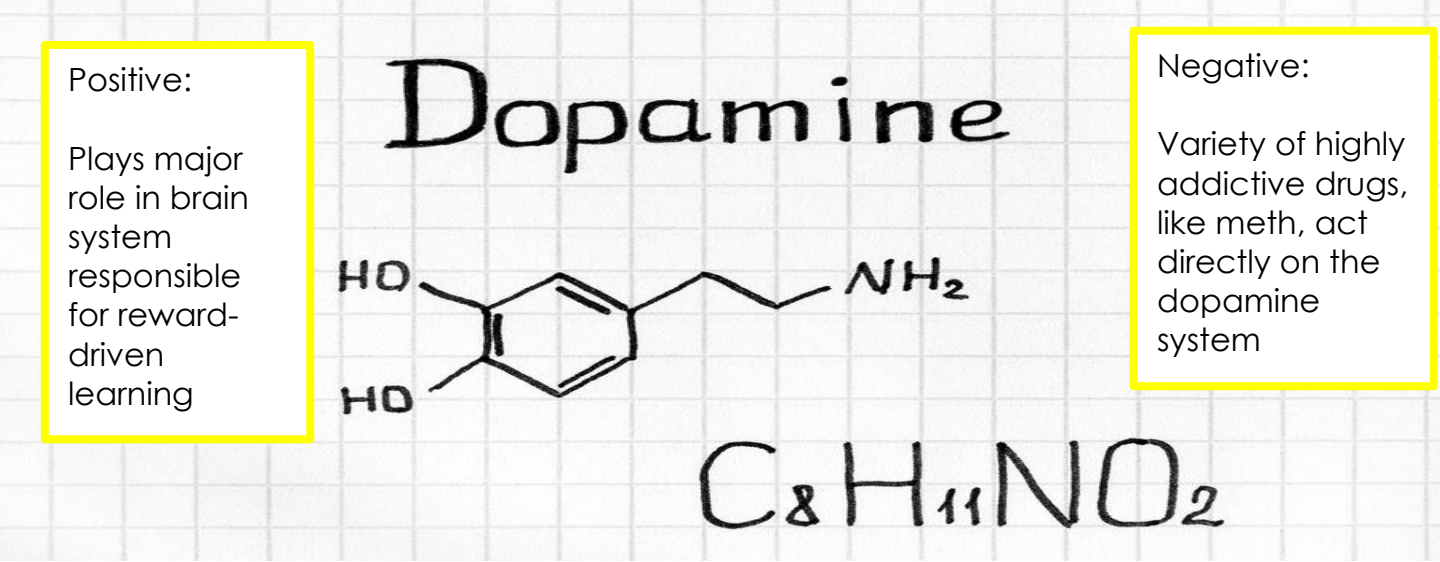
Hormone: A chemical substance produced in the body that controls and regulates the activity of certain cells or organs.

Some activities in the body…	• Some important hormones
Growth Sexual development Reproductive cycle Digestion Sleep Hair growth Hunger	– Insulin – Testosterone – Estrogen – Adrenaline • epinephrine – Dopamine – Melatonin – Thyroxine

What are some of the positives and dangers of the important hormone dopamine?

Positive:

Plays major role in brain system responsible for reward-driven learning



Negative:

Variety of highly addictive drugs, like meth, act directly on the dopamine system

Part 10 Lesson 2 Puberty

Exocrine Glands: Give off chemicals through ducts (tubes) to organs.
These don't produce hormones
Produce tears, sweat, oil, digestive juices, saliva

Hypothalamus: "The Boss" At the base of the brain and regulates the other endocrine glands.

Pituitary Gland: Communicates to hypothalamus (neurons). Size of pea.
Controls blood pressure, growth, metabolism

Metabolism: Chemical reactions that happen in living organisms to maintain life.

Thymus: Responsible for development of immune system.

Thyroid: Controls how quickly the body uses energy, makes proteins, and controls how sensitive the body should be to other hormones.

- Parathyroids release hormones that controls calcium levels in body for nerves and muscles.

Adrenals: Produces adrenaline, part of emergency action plan, puts you on high alert.

Pancreas: Produces insulin, which keeps sugar (glucose) in blood under control.
Helps body absorb sugar and use it for energy.
Turns excess sugar into a storage molecule called glycogen.
Diabetes: Levels of sugar in ones blood is too high.

Ovaries and testes: Produce sex hormones.
Male: Testosterone
Female: Estrogen

Puberty Reading Questions to answer for Boys	Puberty Reading Questions to answer for Girls
Questions: Please answer the 5 questions below. #1) Name three physical changes that can happen to boys during puberty? - Voice gets deeper, muscles develop, facial hair starts growing, etc #2) Name a few things a boy can do about these new changes? - Hormonal changes like voice cracks have no way to be controlled, but for things like acne and facial hair, taking care of personal hygiene is the way to go #3) Does everyone change at the same time? Explain? - Everyone is different: they don't go through puberty at the same time. Some can start as early as 9 years old #4) Make up a relevant question and answer it. - Answers will vary. #5) How does hitting puberty change your emotions? - Mood swings are common during puberty. In particular, boys can feel strong feelings of anger.	Questions: Please answer the questions below. #1) Name three physical changes that happen to girls during puberty? - Increase in height and weight, start growing more hair, get first menstrual period. #2) Name a few emotional changes that may happen during puberty? - Mood swings are common during puberty. Girls may also experience PMS, premenstrual syndrome, right before their periods. #3) Why do you get a menstrual cycle? - It signals the ability to reproduce. #4) Name a few things that can occur during your menstrual cycle in your body? - Cramping, mood swings, fatigue, etc. #5) Make up a relevant question and answer it. - Answers will vary.

Part 10 Lesson 3 Endocrine Wrap-Up

Body Stability: The presence of an abnormally large amount of any hormone or other substance will trigger a gland to secrete a counterbalance hormone.
This keeps your body in chemical balance.

Some hormone levels change in your body over the course of your life such as the sex hormones testosterone and estrogen.

◊ Please name the glands in the Endocrine System

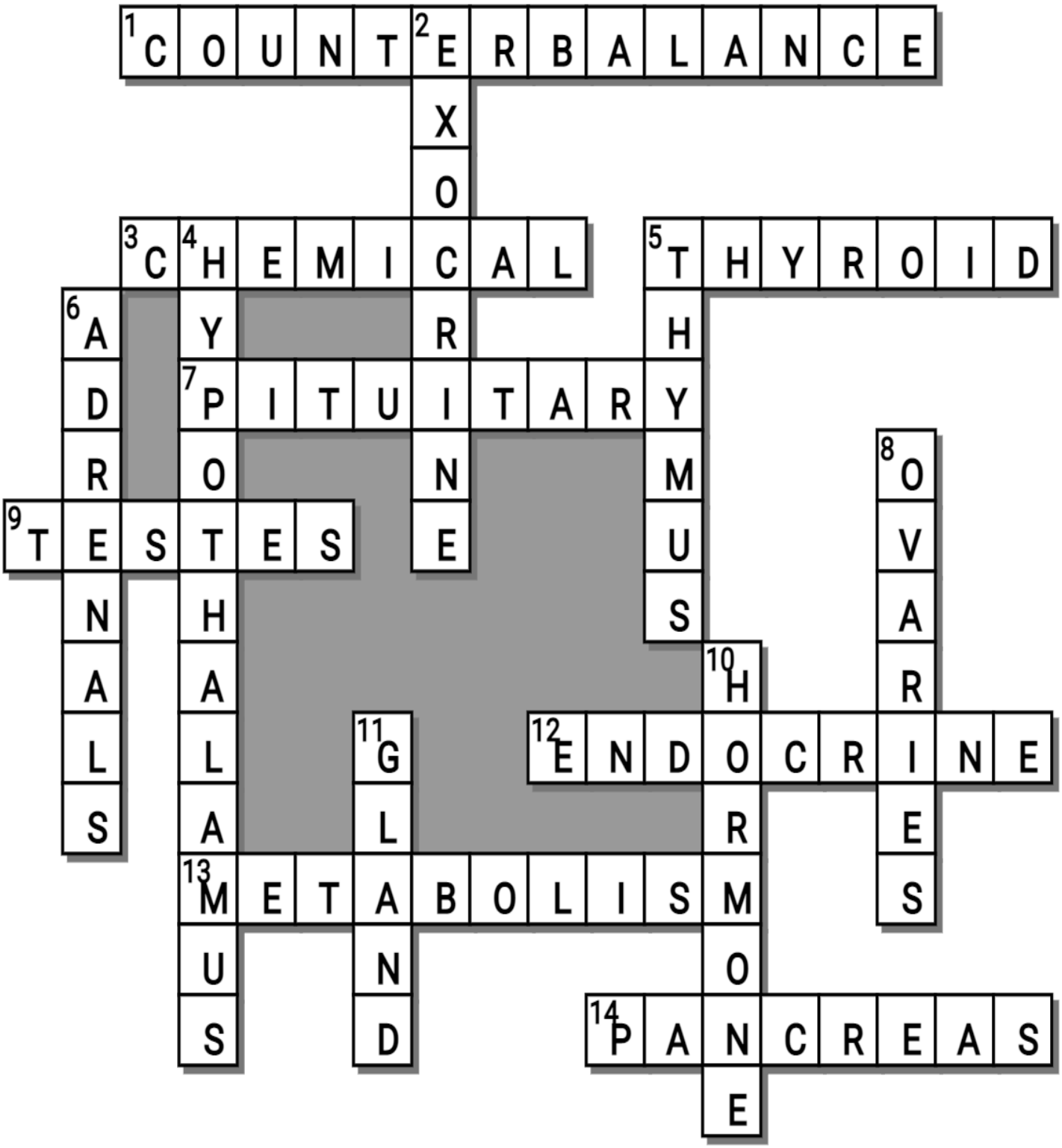
Thyroid gland: Controls how quickly the body uses energy, makes proteins, and controls how sensitive the body should be to other hormones.
Pituitary gland: Communicates to hypothalamus (neurons). Size of pea. Controls blood pressure, growth, metabolism.
Thymus gland: Responsible for development of immune system.
Adrenal gland: Produces adrenaline, part of emergency action plan, puts you on high alert.
Pancreas: Produces insulin, which keeps sugar (glucose) in blood under control.
Ovaries and testes: Produce sex hormones.

Across

1. Body Stability: The presence of an abnormally large amount of any hormone or other substance will trigger a gland to secrete a _____ hormone. This keeps your body in chemical balance.
3. The endocrine sends _____ messages in blood.
5. Controls how quickly the body uses energy, makes proteins, and controls how sensitive the body should be to other hormones.
7. _____ Gland: Communicates to hypothalamus (neurons). Size of pea. Controls blood pressure, growth, metabolism
9. Ovaries and _____: Produce sex hormones.
12. The _____ system is a system of glands that release chemical messages into your body.
13. Chemical reactions that happen in living organisms to maintain life.
14. Produces insulin, which keeps sugar (glucose) in blood under control. Helps body absorb sugar and use it for energy. Turns excess sugar into a storage molecule called glycogen. Diabetes: Levels of sugar in ones blood is too high

Down

2. _____ Glands: Give off chemicals through ducts (tubes) to organs. These don't produce hormones Produce tears, sweat, oil, digestive juices, saliva
4. "The Boss" At the base of the brain and regulates the other endocrine glands.
5. Responsible for development of immune system.
6. Produces adrenaline, part of emergency action plan, puts you on high alert.
8. _____ and testes: Produce sex hormones.
10. A chemical substance produced in the body that controls and regulates the activity of certain cells or organs.
11. A cell, a group of cells, or an organ that produces a secretion for use elsewhere in the body.



----------teacher can remove word bank to make puzzle more challenging----------

Possible Answers

ADRENALS, EXOCRINE, GLAND, HORMONE, HYPOTHALAMUS, METABOLISM, OVARIES, PANCREAS, PITUITARY, TESTES, THYMUS, THYROID, CHEMICAL, COUNTERBALANCE, ENDOCRINE

Part 10 Lesson 4 The Reproductive System

Part 10 Lesson 4

Sugar Babies Responsibility Sheet Names_____ and _____

Name of Child: _____ _____ _____ ____

You are required to carry and nurture a bag of sugar throughout the day for one week. You must never leave the bag of sugar unsupervised. During other classes, the bag of sugar naps next to your seat or at your desk. Your teacher can decide to have group naps. The bag of sugar is never placed in a locker or backpack. Treat the bag of sugar like a child, it should be given attention / love, changed, clothed, and feed throughout the day.

Babies found unattended, unclothed, unloved, or physically harmed will result in an immediate removal and will receive a zero. There aren't any do-overs in this project as neglect has lasting effects.

I have read the above. Date:_____ Signed:_____ _____

Schedule of Care giving

Blocks	Monday	Tuesday	Wednesday	Thursday	Friday
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
Who takes home?					

Please provide a statement that you are ready to take on this responsibility.

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

The Reproductive System: Produces, stores, nourishes, and releases sex cells

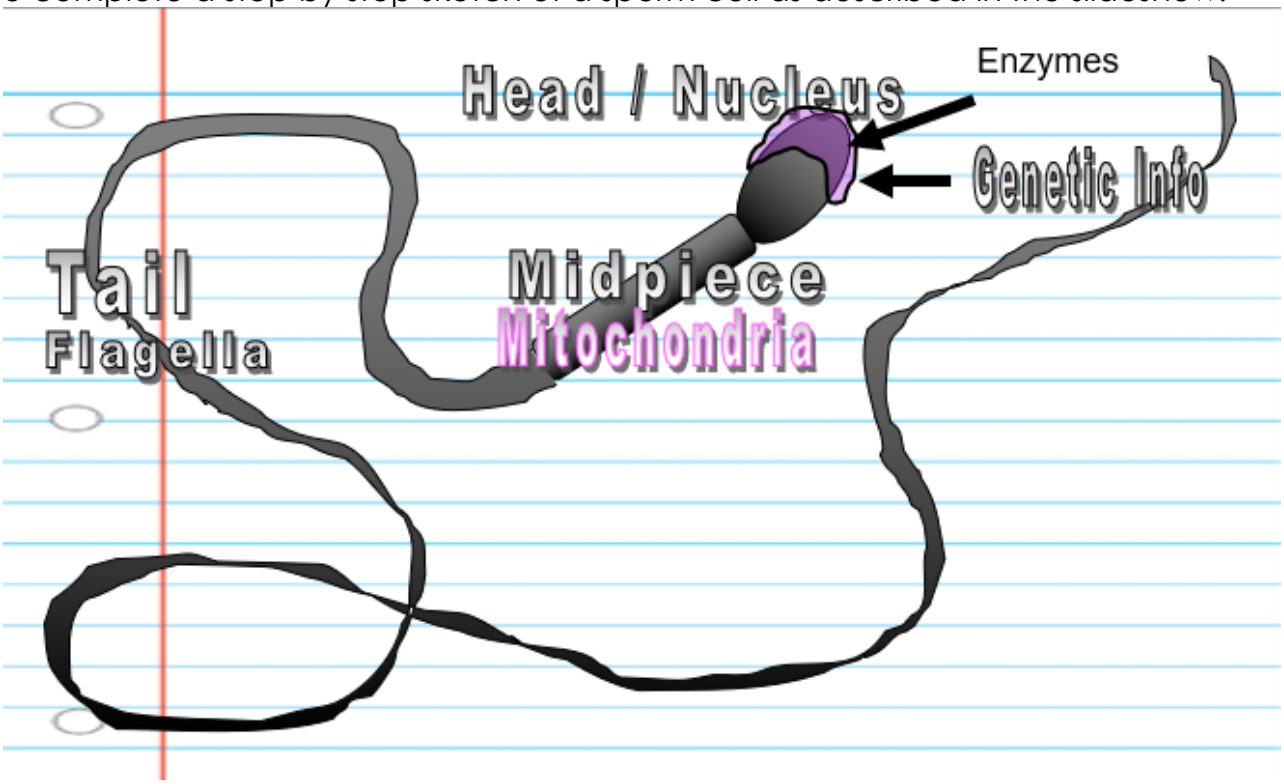
Egg (Ovum): Female sex cell.

Sperm: Male sex cell (gamete)

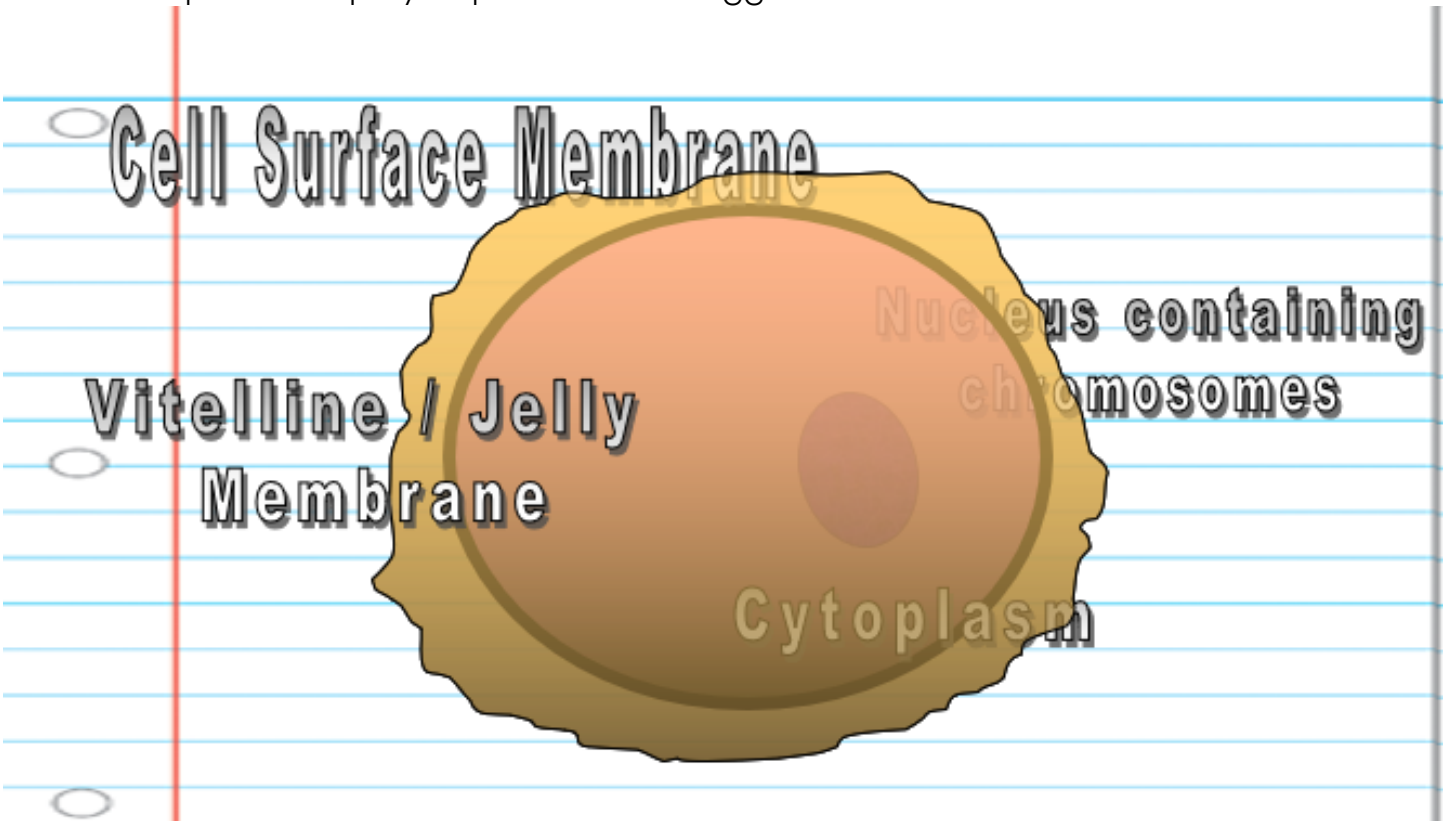
Fertilization: The joining of the egg and the sperm.

- The sperm and egg contain genetic information that will allow this one cell to multiply into trillions.

Please complete a step by step sketch of a sperm cell as described in the slideshow.



Please complete a step by step sketch of an egg cell as described in the slideshow.



Sex Cells: The sperm (male), Egg (Female)

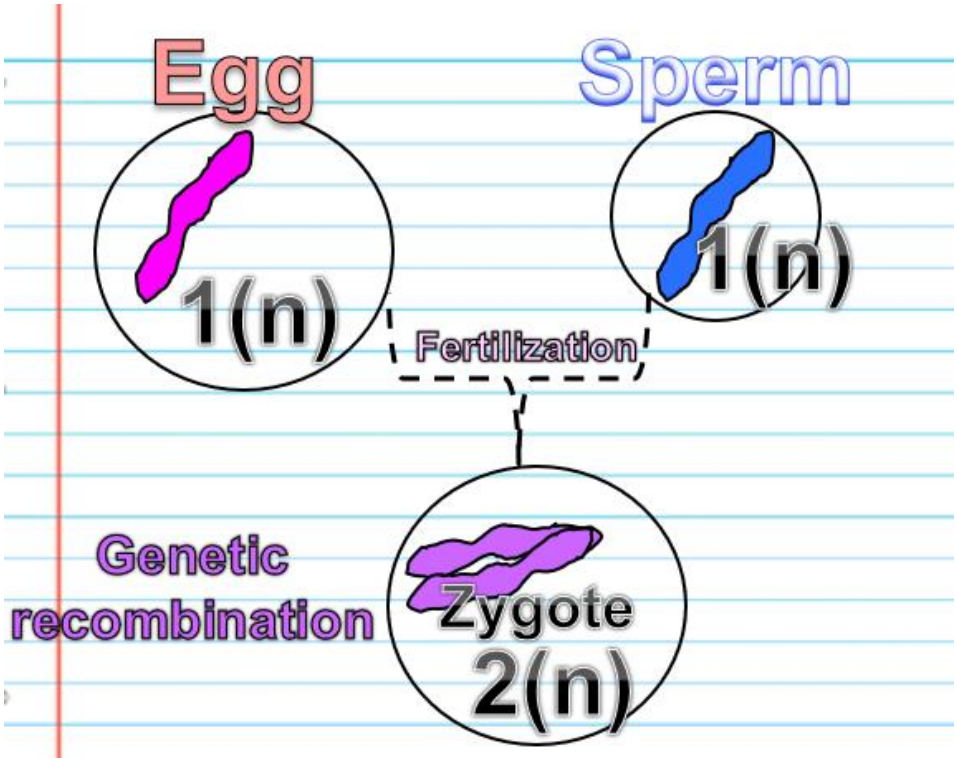
The Egg: a haploid female reproductive cell or gamete.

- Much larger than the sperm
- At birth, there are approximately 1 million eggs; and by the time of puberty, only about 300,000 remain

All of the cells in our body except for our sex cells have 46 chromosomes.

- Our sex cells have 23. Why?

Because our sex cells are the sperm and the egg, and when the sperm (23 chromosomes) and egg (23 chromosomes) meet, you get the correct number of human chromosomes (46).



Name the number of chromosomes in each human cells below?

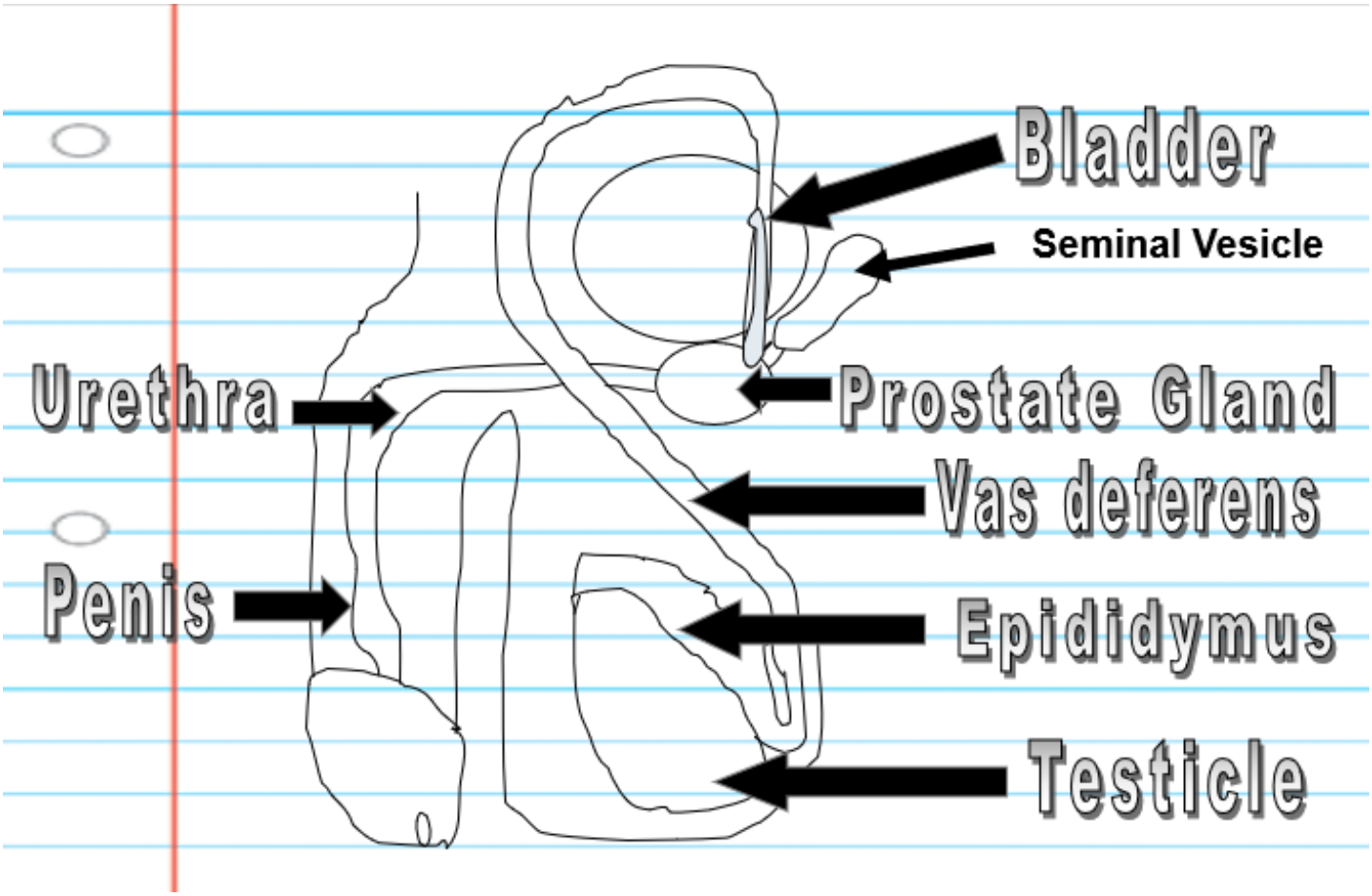
Brain Cell	46	Muscle Cell	46	Egg Cell	23	Liver Cell	46
Heart Cell	46	Nerve Cell	46	Skin Cell	46	Sperm Cell	23

Part 10 Lesson 5 Male Reproductive System

Fertilization: The process of fertilizing an egg.

- The fusion of male and female gametes to form a zygote.

Please complete the sketch of the male reproductive system as shown in the slideshow.

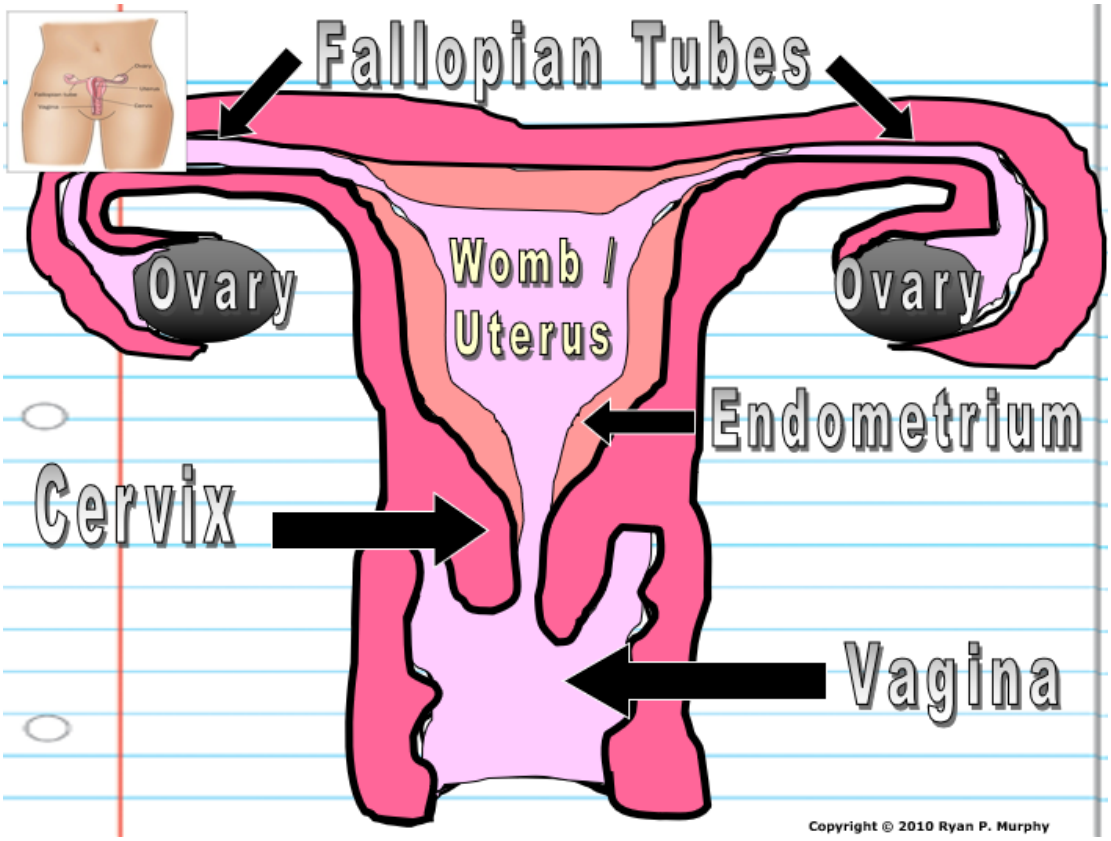


Bladder: A membranous sac in humans and other animals, in which urine is collected for excretion
Vas deferens: This is the tube connecting the testes with the urethra.
Seminal vesicle: Small tubular glands that are near the prostate. The primary function involves the production of fluid that makes up a significant percentage of semen.
Penis: This is the duct for the transfer of sperm during copulation.
Testicle: This is either of the two oval organs that produce sperm in men.
Urethra: This is the duct by which urine is conveyed out of the body from the bladder.
Epididymus: This is a highly convoluted duct behind the testis, along which sperm passes to the vas deferens.

Part 10 Lesson 6 The Female Reproductive System

Female Reproductive System: The primary female reproductive organs are the ovaries.

Please complete the sketch of the female reproductive system as shown in the slideshow.

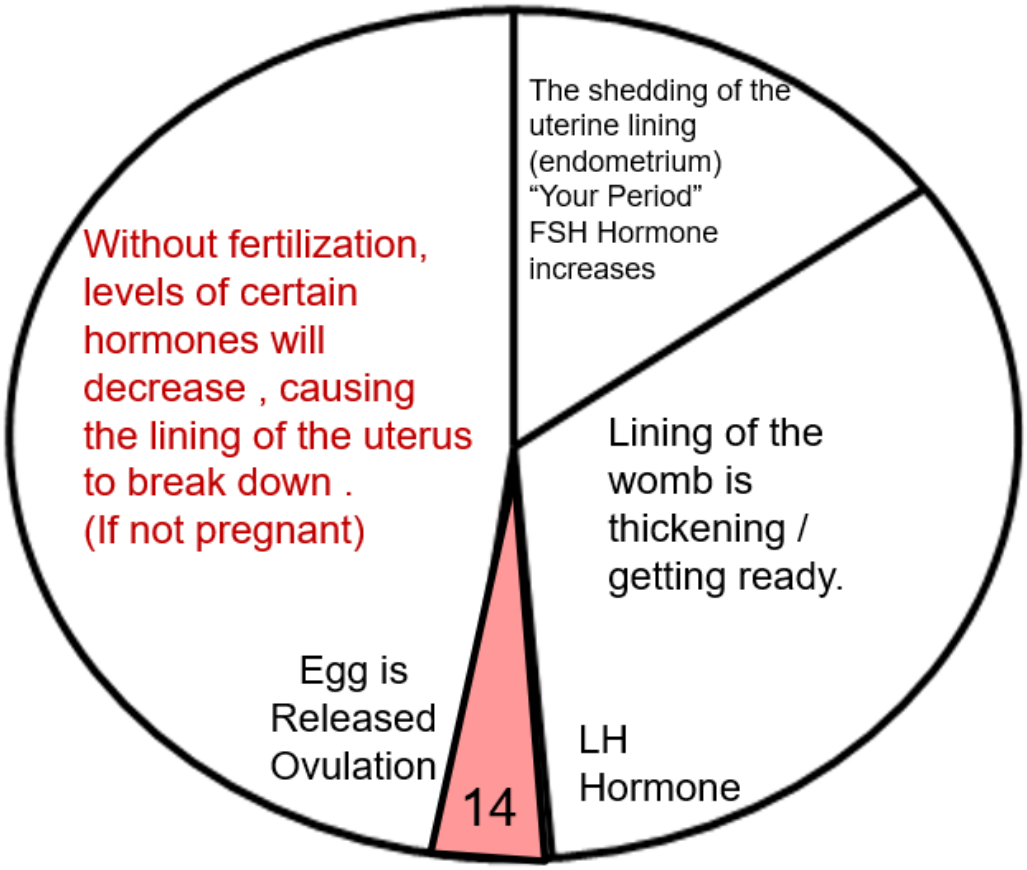


Cervix: Located between the vagina and uterus, it serves as a passageway for menstrual blood on the way out, and semen on the way in. (During childbirth, the cervix slowly thins and opens, allowing the baby to move from the uterus and into the vaginal canal.)
Ovary: A female reproductive organ in which ova or eggs are produced.
Womb/Uterus: This is a muscular organ, containing and nourishing the young prior to birth.
Fallopian tubes: These transport the egg from the ovary to the uterus (the womb).
Vagina: Muscular tube leading from the external genitals to the cervix of the uterus.
Endometrium: This is the mucous membrane lining the uterus, which thickens during the menstrual cycle in preparation for possible implantation of an embryo.

Part 10 Lesson 7 The Menstrual Cycle

The Menstrual Cycle: A series of changes a woman's body goes through to prepare for a pregnancy.

Please complete the diagram of the menstrual cycle as described in the slideshow.



Part 10 Lesson 8 Birth, Fetal Alcohol, Smoking while Pregnant

An embryo is the early stage of development of a multicellular organism. In general, in organisms that reproduce sexually, embryonic development is the part of the life cycle that begins just after fertilization and continues through the formation of body structures, such as tissues and organs.

A membrane called the amniotic sac surrounds the embryo to cushion and protect it.

Sonogram: A diagnostic medical image created using ultrasound echo (sonographic), equipment.

The Placenta: Organ that connects the developing fetus to the uterine wall.
- Allows nutrient uptake
- Eliminates waste
- Gas exchange via the mother's blood supply

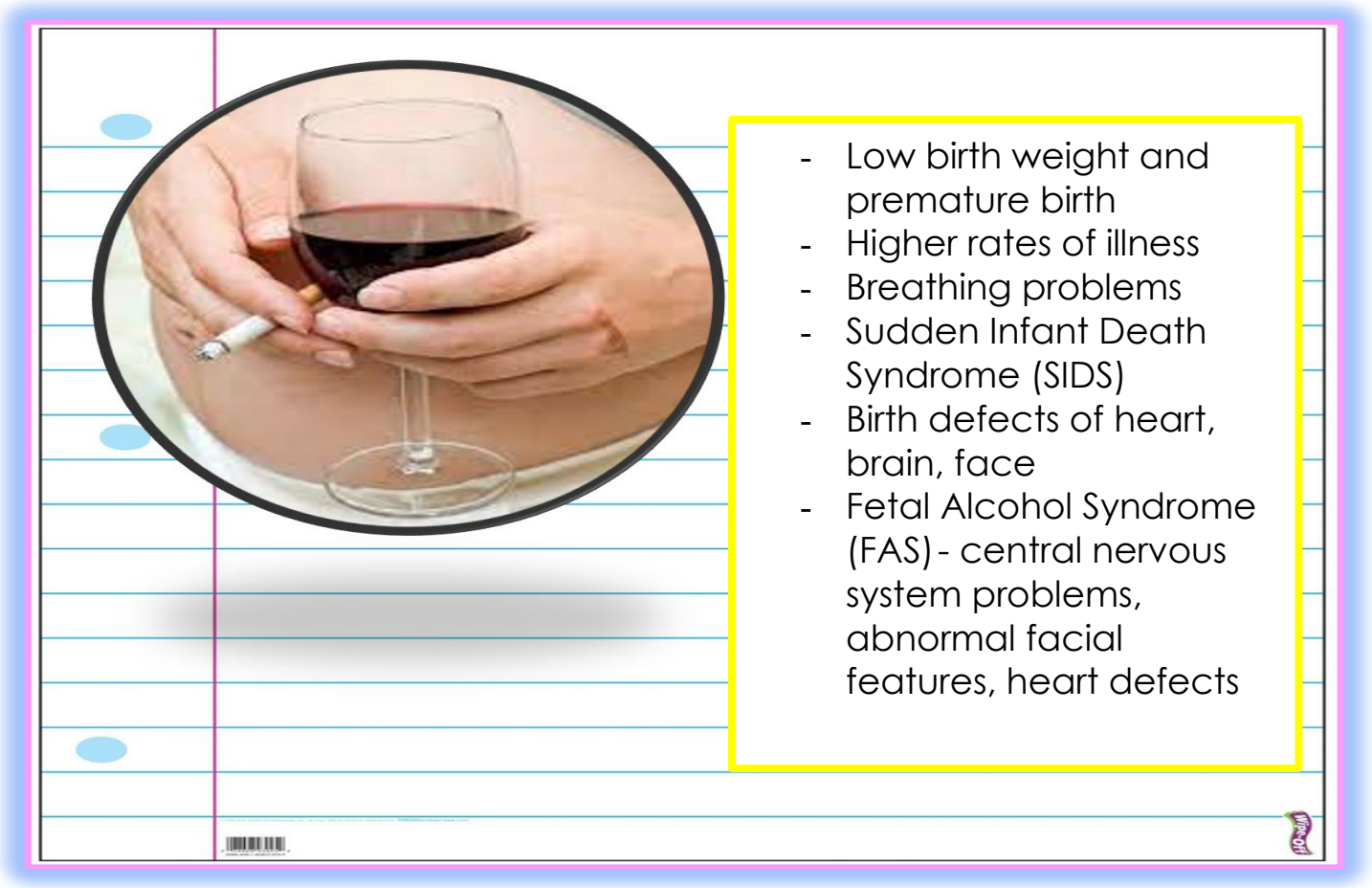
Umbilical cord: a flexible cordlike structure containing blood vessels and attaching a human or other mammalian fetus to the placenta during gestation.

Caesarean Section:
- Sometimes called a C-section.
- Surgical procedure in which incisions are made through a mother's abdomen, and uterus to deliver one or more babies.

The growing fetus gets all of its nutrients directly from its mother's blood supply.

Smoking, drinking alcohol, and exposing the baby to any dangerous drugs can have severe consequences to the developing fetus.

What are some of the dangers of smoking and drinking while pregnant?



Part 10 Lesson 9 Wrap-Up and Miracle of Life / Sugar Babies

The Miracle of Life

http://www.pbs.org/wgbh/nova/body/life-greatest-miracle.html

Please watch the miracle of life and include some information about the video in the boxes below. Feel free to draw, bullet list, and write. (PG-13 if possible)

Part I: Passing your Genes	Part II: The Gametes Journey
- Genetic variability - Meiosis—gametes form with lots of genetic variation, and when a sperm and egg cell come together, the fertilized egg will have a combination of its ancestors' genes.	- Males continue producing lots of sperm cells every second of the day, while females created all their egg cells during their own development in the mother's womb. - In order for fertilization to happen, the sperm cells must make it past the cervix and into the fallopian tube before the menstrual cycle occurs (otherwise, the egg cell will die).

	- The egg cell is guarded by support cells, which only allow some sperm cells to get through - The sperm cell still has to make it past the outer layer of the egg cell (zona)
Part III: Taking Shape - The egg has to finish meiosis. As the fertilized egg slowly moves down the fallopian tube towards the uterus, it divides, creating building blocks for an embryo. - 2 weeks after conception, the cells start to organize into an embryo (gastrulation) - Your genes determine how your body forms when they are **turned on** (what makes an arm an arm and what makes a rib a rib)	Part IV: Message in the Genes - Chemical messages turn genes on and off - Biological sex is determined by genes - Form and function decided by genes (limbs, organs, skeletal structure, etc)
Part V: Feeding the Fetus - The mother's blood is the source of food and nutrients - Villi, located on the underside of the placenta, grab oxygen and nutrients from the blood	Part VI: The Birth (Reactions?) - Answers will vary

LIFE'S GREATEST MIRACLE

Passing your Genes

DNA The molecule inside cells that contains the genetic information responsible for the development and function of an organism. DNA molecules allow this information to be passed from one generation to the next.

Messages in the genes

Chromosome: A structure found inside the nucleus of a cell. A chromosome is made up of proteins and DNA organized into genes. Each cell normally contains 23 pairs of chromosomes. Meiosis is the creation of sex cells and creates diversity.

The Birth?

Pain is a part of human childbirth. That being said, the rewards of being a parent can far outweigh the pain. The time in labor will vary but the average is generally about 9 hours. Much longer than any other mammal.

Sergio and Melinda

They seemed to be extremely caring of each other and ready to take this journey together. They were supportive and excited to be parents.

The Gametes Journey

The Sperm (Male): The male makes millions of sperm cells (Quantity is the strategy for success)

The Egg (female): Quality is the mode for success. Usually only one egg is released per-month but the body puts a lot of energy into that one cell

Taking Shape

The process of development occurs in three main stages. The first two weeks after conception are known as the germinal stage, the third through the eighth week is known as the embryonic period, and the time from the ninth week until birth is known as the fetal period.

Behavior during video: (Excellent) 1, 2, 3, 4, 5, 6, 7, 8, 9, 10 (Poor) _____

Please answer the questions below about the Sugar Baby Project

On a scale of 1-10 (Ten being the most) how difficult was this experience?

Answers will vary

What were the best parts, and what were the difficult parts of this assignment?

Answers will vary

Describe your relationship with your partner during this experience. What were your roles?

Answers will vary

Has this experience changed your view of having children?

- Remember, this was only bags of sugar and not real children that require your constant love and attention…and $

Answers will vary

Teacher Comments:

Across

1. _____ Section: Surgical procedure in which incisions are made through a mother's abdomen, and uterus to deliver one or more babies.
2. The joining of the egg and the sperm.
4. _____ cord: Flexible cordlike structure containing blood vessels and attaching a human or other mammalian fetus to the placenta during gestation.
6. This is the duct for the transfer of sperm during copulation.
8. An _____ is the early stage of development of a multicellular organism.
10. This is the mucous membrane lining the uterus, which thickens during the menstrual cycle in preparation for possible implantation of an embryo.
12. Womb or _____: This is a muscular organ, containing and nourishing the young prior to birth.
13. This is a highly convoluted duct behind the testis, along which sperm passes to the vas deferens.
16. Male sex cell (gamete)
17. Egg (_____): Female sex cell
18. The Egg: a h_____ female reproductive cell or gamete.
19. This is the duct by which urine is conveyed out of the body from the bladder
22. This is the tube connecting the testes with the urethra.
25. Muscular tube leading from the external genitals to the cervix of the uterus.
26. Don't drink _____ or smoke while pregnant

Down

1. Located between the vagina and uterus, it serves as a passageway for menstrual blood on the way out, and semen on the way in. (During childbirth, the cervix slowly thins and opens, allowing the baby to move from the uterus and into the vaginal canal.)
3. The fusion of male and female gametes to form a _____
5. The _____ Cycle: A series of changes a woman's body goes through to prepare for a pregnancy.
7. This is the duct for the transfer of sperm during copulation.
9. The _____ System: Produces, stores, nourishes, and releases sex cells.
11. A female reproductive organ in which ova or eggs are produced.
14. Organ that connects the developing fetus to the uterine wall.
15. A diagnostic medical image created using ultrasound echo (sonographic), equipment.
16. Don't drink alcohol or _____ while pregnant.
20. This is a firm partly muscular chestnut sized gland in males at the neck of the urethra; produces a viscid secretion that is the fluid part of semen
21. _____ Tubes: These transport the egg from the ovary to the uterus (the womb).
23. _____ Reproductive System: The primary reproductive organs are the ovaries.
24. _____ Vesicle" Small tubular glands that are near the prostate. The primary function involves the production of fluid that makes up a significant percentage of semen.

----------teacher can remove this word bank to make puzzle more challenging----------

Possible Answers

CAESCAREAN, CERVIX, EMBRYO, ENDOMETRIUM, EPIDIDYMUS, FALLOPIAN, FEMALE , FERTILIZATION, HAPLOID, MENSTRUAL, OVARY, OVUM, PENIS, PLACENTA, PROSTATE, REPRODUCTIVE, SEMINAL, SMOKE, SONOGRAM, SPERM, TESTICLE, UMBILICAL, URETHRA, UTERUS, VAGINA, VASDEFERENS, ALCOHOL , ZYGOTE

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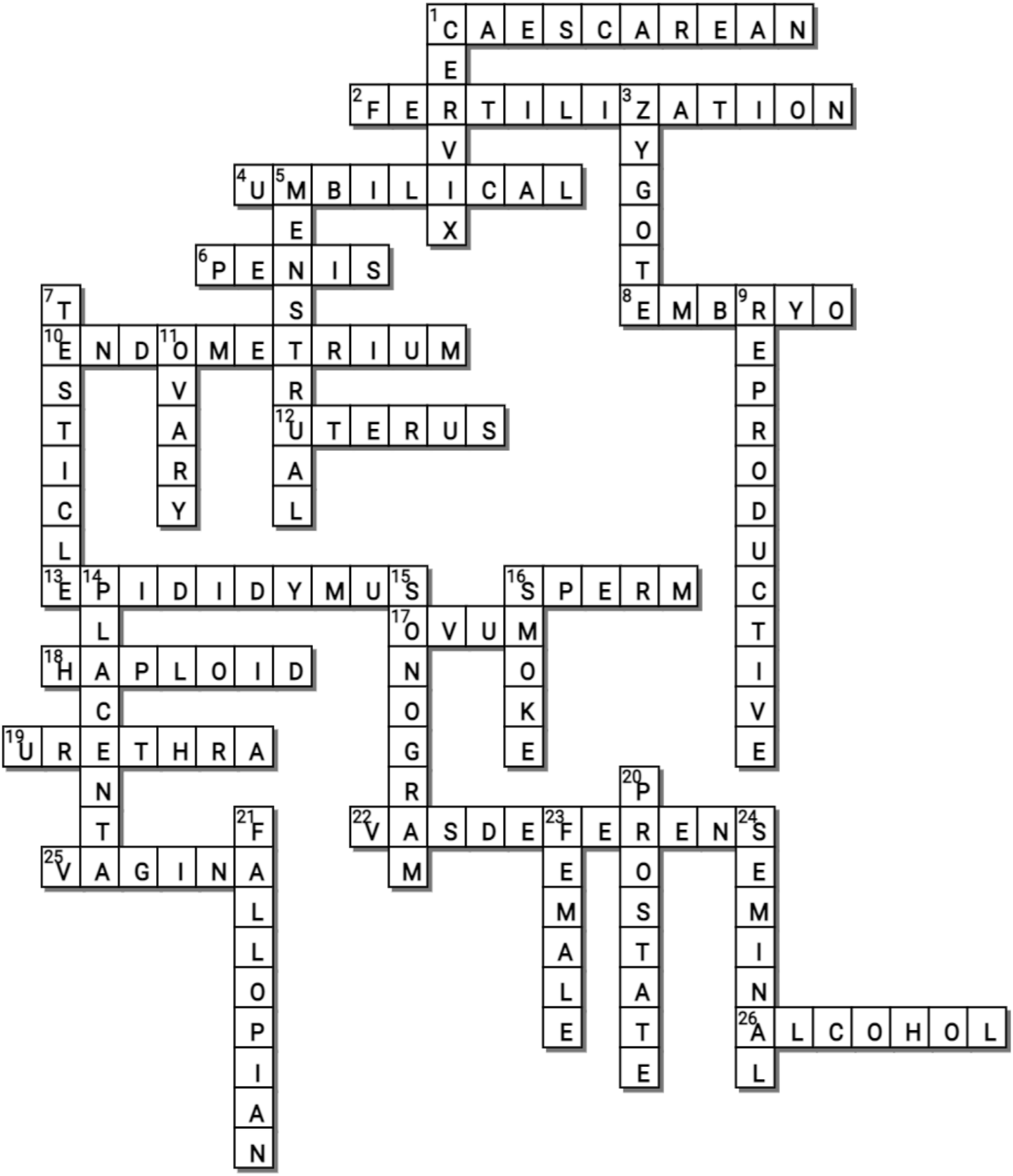
1 CAESCAREAN
2 FERTILIZATION
3 ZYGOT
4 UMBILICAL
5 MEX
6 PENIS
7 T
S
8 EMBRYO
9 EPRODUCTIVE
10 ENDOMETRIUM
11 OVARY
12 UTERUS
STICL
13 EPIDIDYMUS
14 PLACENT
15 SPERM
16 SPERM
17 OVUM
NOGR
18 HAPLOID
19 URETHRA
20 PROSTATE
21 FALLOPIAN
22 VASDEFERENS
23 FEMALE
24 SEMININ
25 VAGINA
26 ALCOHOL

Part 10 Review Game

Name

1-20 = 5 pts Lesson 10 Review Game
*20-*25 * = Bonus + 1 pt,
(Secretly write owl in correct space +1 pt)
Final Question = 5 pt wager

Score ____ / 100

IT's UNITED	HANGING TOUGH	MIGHTY APHRODITE	TEST OVER	FAMILY BABIES Bonus round 1 pt each
1) C: reproductive system	6) Flagella	11) A: Cervix B: Womb/Uterus C: Ovary D: Fallopian tubes	16) A: Pituitary gland B: Adrenal gland C: Ovary (female) D: Testis (male)	*21) Who Framed Roger Rabbit
2) Fertilization	7) A: Testicle B: Epididymus C: Vas deferens D: Prostate gland	12) Endometrium	17) Hormone	*22) Dora and Boots
3) 23 each, together they equal 46 chromosomes	8) Seminal vesicle	13) Fallopian tubes	18) C: chemical messages to the body via blood	*23) Pebbles and Bamm Bamm
4) DNA	9) Prostate gland	14) The placenta	19) Sugar (glucose). Maintains homeostasis.	*24) Stewart Gilligan Griffin "Stewie"
5) Gametes	10) Testicle	15) Smoke or drink alcohol	20) Male: testosterone Female: estrogen	*25) Gerber

Final Question Wager _____/5 Answer: Umbilical cord