7th Grade Plants ch4 Review KEY /104

photosynthesis	A) process where plants use energy from sunlight to make food from CO_2 and H_2O
Chlorophyll	B) green pigment in chloroplasts that captures energy from sunlight
Chloroplast	C) organelles in plant cell that contain chlorophyll
Cell wall	D) sturdy outside shell of a plant cell that is made mostly of fiber
Autotroph/producer	E) organism that makes its own food
Sporophyte	F) stage in a plant life cycle when spores are made
Gametophyte	G) stage in a plant life cycle where male gametophytes produce sperm and female gametophytes produce egg
Vascular	H) plant that has special tissues for moving food or water (xylem and phloem)
Non vascular	I) plant that has no special tissues for moving food or water. They move by diffusion only. Examples: moss, liverwort, hornwort
Gymnosperm	J) non flowering plant that makes seeds
Angiosperm	K) flowering plant that makes seeds
Rhizoid	L) root-like structure in nonvascular plants
Rhizome	M) underground stem that can produce new plants in new locations
Gymnosperm	N) seed making plant that does not have fruit or flowers
Angiosperm	O) seed making plants that have fruit and flowers
Monocot	P) angiosperm that has one cotyledon, leaves with parallel veins, scattered vascular tissue, and flower petals in 3s.
Dicot	Q) angiosperm that has two cotyledons, leaves with branching veins, vascular tissue in a ring, and flower petals in 4s or 5s.
diffusion	R) when a substance moves (seeps) from an area of high concentration to an area of low concentration

ROOTS, STEMS,AND LEAVES

Herbaceous	A) soft and flexible stem
Woody	B) rigid stem
Tap root	C) one main root (usually dicots and gymnosperms)
Fibrous	D) branched roots (usually monocots)
Root cap	E) protects the tip of a root and secretes a slimy substance making it easier for the root To move through soil
Phloem	F) vascular tissue that transports food molecules
Xylem	G) vascular tissue that transports water and minerals
Epidermis	H) outside layer of cells on a plant
Palisade	I) densely packed layer of cells in the leaf with many chloroplasts
Spongy	J) lightly packed layer of cells in the leaf that allow gases to move about
Cuticle	K) waxy coating on the surface of plants to keep them from drying out
Stoma	L) opening in the bottom of a leaf that lets gases in and out
Guard cells	M) Cells that open and close the stomata (openings)

FLOWERS AND SEEDS

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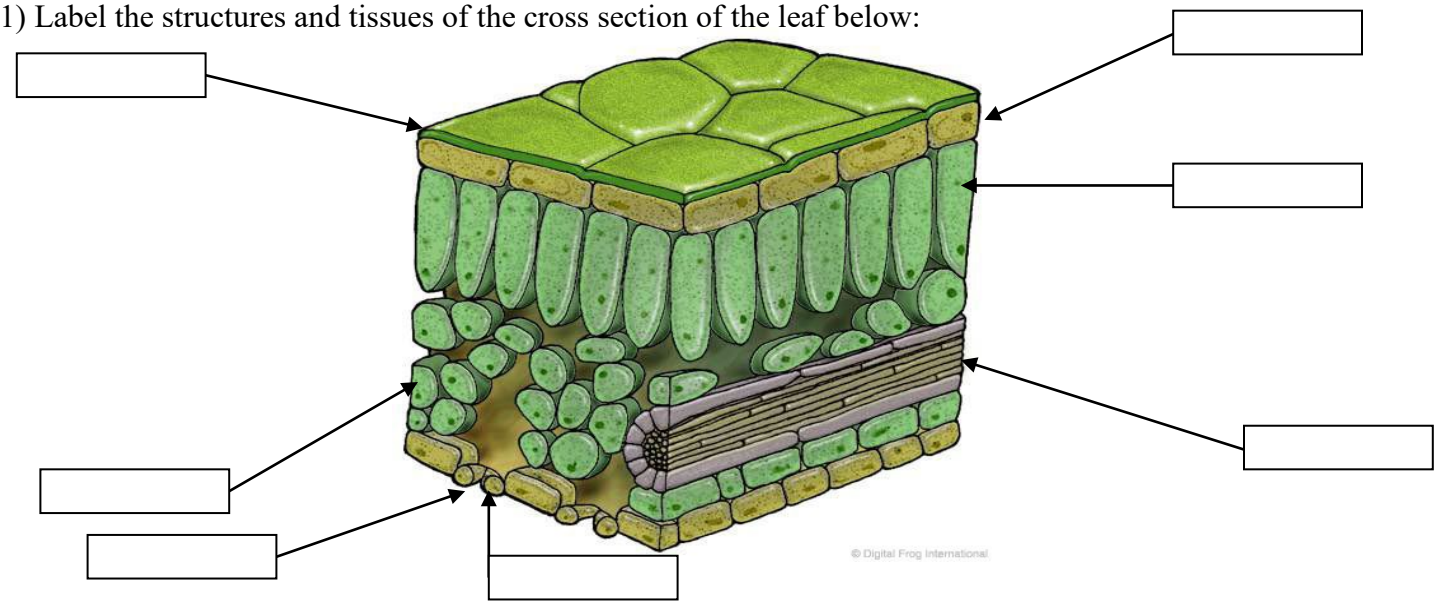
Sepal	A) leaves at the base of a flower that protect it when it is still a bud
Petal	B) colored flat portion of a flower that attracts pollinators
Pistil	C) female reproductive structure in a flower
Stigma	D) the top sticky part (of the female structure)
Style	E) the stalk-like middle part (of the female structure)
Ovary	F) the bottom part (of the female structure) that holds eggs
Ovule	G) contains the egg
Stamen	H) male reproductive structure in a flower
Anther	I) the top part (of the male structure) with pollen in it
Filament	J) the stalk-like middle part (of the male structure)
Pollen	K) granule made by a flower that contains sperm
Pollination	L) the point in time where pollen gets stuck to the stigma
Fertilization	M) The point in time where the sperm (pollen) meets egg (ovule) in the flower
Cotyledon	N) stored food in a seed that is used by the young plant
Seed coat	O) protective coating of a seed
Embryo/ seedling/ plantlet	P) baby plant

1) Label the structures and tissues of the cross section of the leaf below:



a) Which layer secretes a waxy substance to prevent water loss? What is this waxy substance called?
UPPER EPIDERMIS TISSUE / CUTICLE

b) Which layer is the site of photosynthesis?
PALISADE TISSUE

c) Which layer is the site of air exchange?
SPONGY TISSUE

d) What structure can be opened or closed to control air exchange and water loss?
STOMA (STOMATA)

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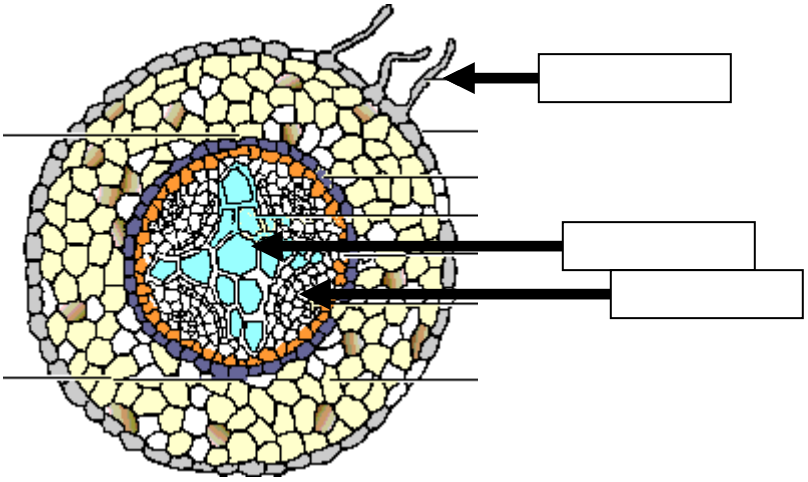
e) What structure allows food to moved down the plant and water and minerals to move up the plant?
VASCULAR TISSUE (XYLEM AND PHLOEM)

2) Label the structures and tissues of the cross section of the root below:

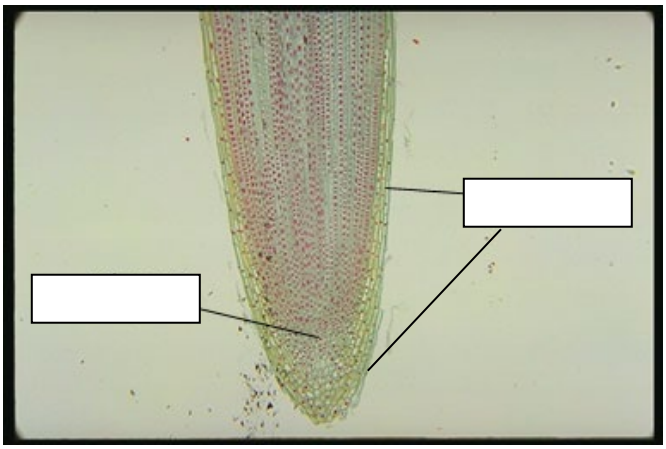


a) Which structure allows water and minerals to flow up the plant?
XYLEM

b) Which structure allows food to flow through the root?
PHLOEM

c) Which layer increases the absorption surface area of roots?
ROOT HAIRS

3) Label the structures and tissues of the lateral section of the root below:



a) Which tissue protects the root tip and secretes a slime to help the root tip grow through the soil?
ROOT CAP

b) Which tissue is the site of major cell division?
ROOT TIP

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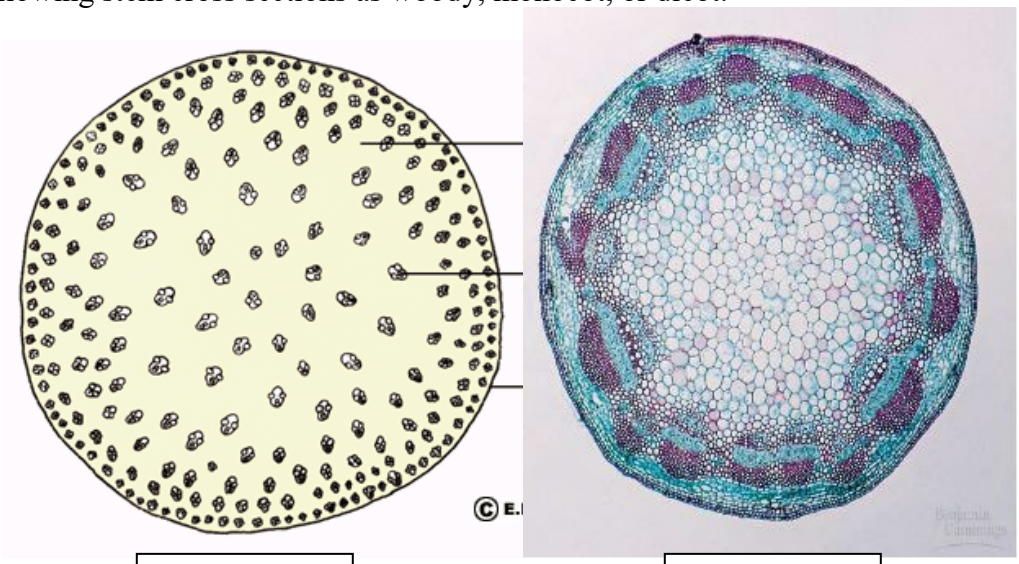
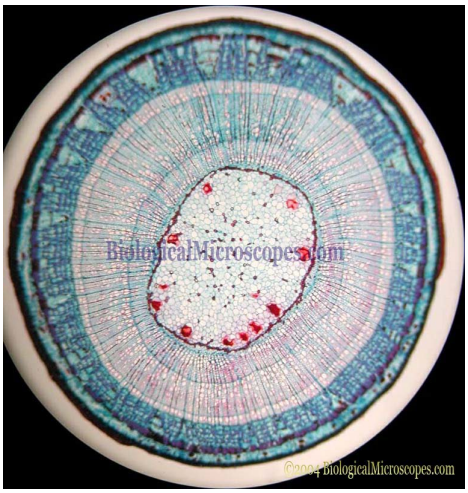
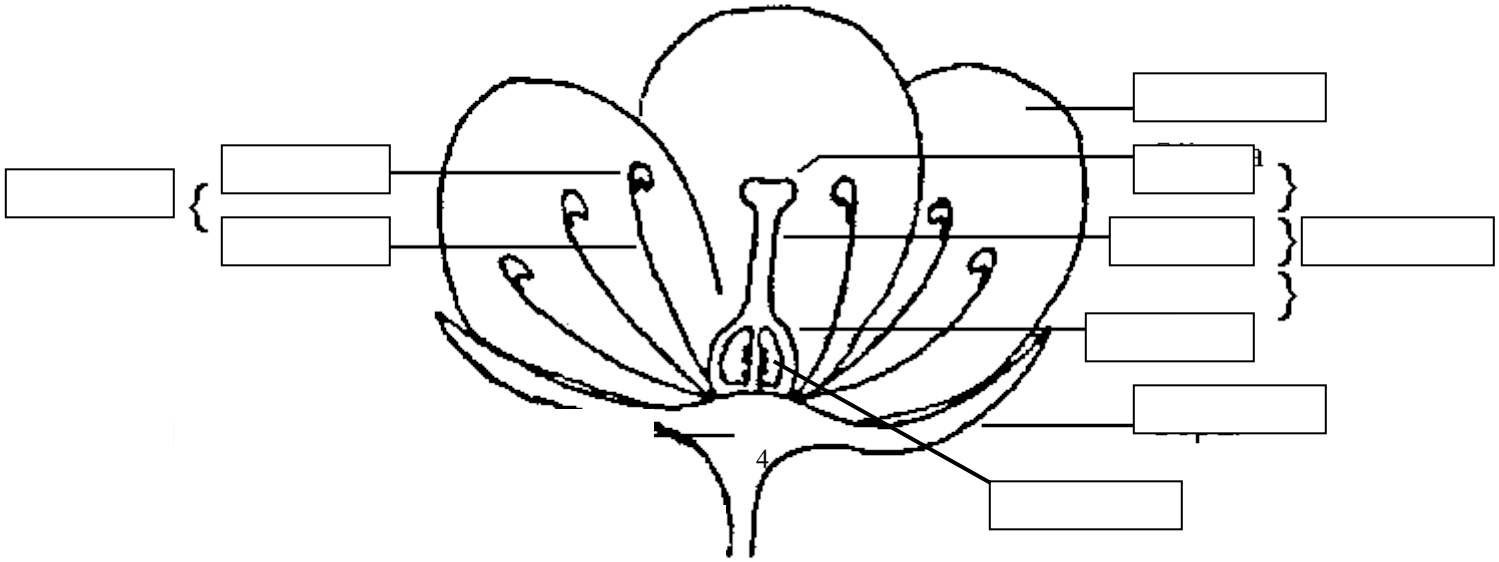
4) Label the following stem cross sections as woody, monocot, or dicot.





5) Label the flower below



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a) Which structure contains the eggs/ovules?
OVARY

b) Which structure is the male reproductive structure in a flower?
STAMEN

c) Which structure is the female reproductive structure in a flower?
PISTIL

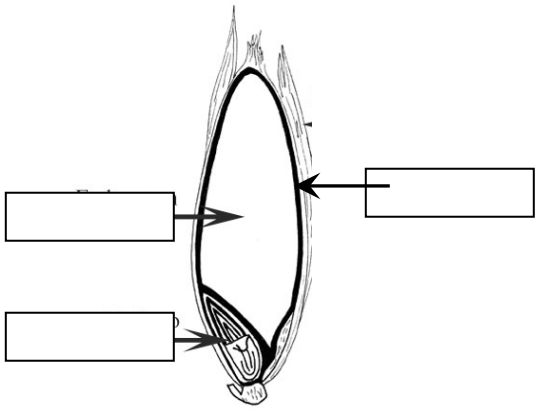
d) Which structure attracts pollinators?
PETALS

e) Which structure protects flower when it is still a bud?
SEPALS

f) Which structure is sticky and catches the pollen?
STIGMA

g) Which structure contains the pollen?
ANTHERS

6) Label the seed cross section below:



a) Which structure is the baby plant?
EMBRYO

b) Which structure feeds the baby plant until it can reach the surface and begin to photosynthesize?
COTYLEDON

c) Which structure protects the seed, even through the digestive tract of animals?
SEED COAT

7) How is a gymnosperm different than an angiosperm AND give at least two examples of each?
GYMNOSPERM- NO FRUIT, NO FLOWERS, HAS CONES (PINE TREES, FIR TREES)
ANGIOSPERM- HAS FRUIT, HAS FLOWERS, NO CONES (ROSES, TOMATOS, APPLE TREE)

8) How is a monocot different than a dicot AND give at least two examples of each?
MONOCOT- PARALLEL VEINS, FLOWERS IN 3's, ONE COTYLEDON, VASCULAR TISSUE SCATTERED
DICOT- BRANCHED VEINS, FLOWERS IN 4's AND 5's, TWO COTYLEDONS, VASCULAR TISSUE IN A RING

9) How is a vascular plant different than a non vascular plant AND give at least two examples of each?
VASCULAR- HAS TUBES TO MOVE WATER AND FOOD (CORN, MAPLE TREE)
NON VASCULAR- HAS NO TUBES TO MOVE WATER AND FOOD (MOSS, LIVERWORTS, HORNWORTS