



South Dakota
Soil Health Coalition

SOIL HEALTH

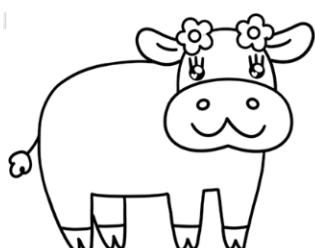
3RD-5TH COLORING & ACTIVITIES BOOKLET



COVER CROPS

WORD SEARCH

R	E	T	W	N	T	R	S	U	N	T	S
B	A	R	E	E	Y	I	A	S	T	A	O
U	F	A	V	A	B	E	A	N	F	S	S
C	Z	M	T	O	R	H	D	N	A	N	A
K	O	O	W	H	E	A	T	L	V	E	O
W	T	C	L	L	W	Y	I	D	P	H	P
H	O	S	Y	N	O	O	R	R	D	E	Y
E	R	M	I	N	L	M	E	I	E	E	R
A	G	N	U	O	F	T	I	M	L	L	H
T	E	L	A	I	N	L	I	R	S	T	T
Y	F	N	V	I	U	L	A	G	A	H	E
S	D	S	W	P	S	B	T	O	V	O	Y



SUNFLOWER

FAVABEAN

RYE

BARLEY

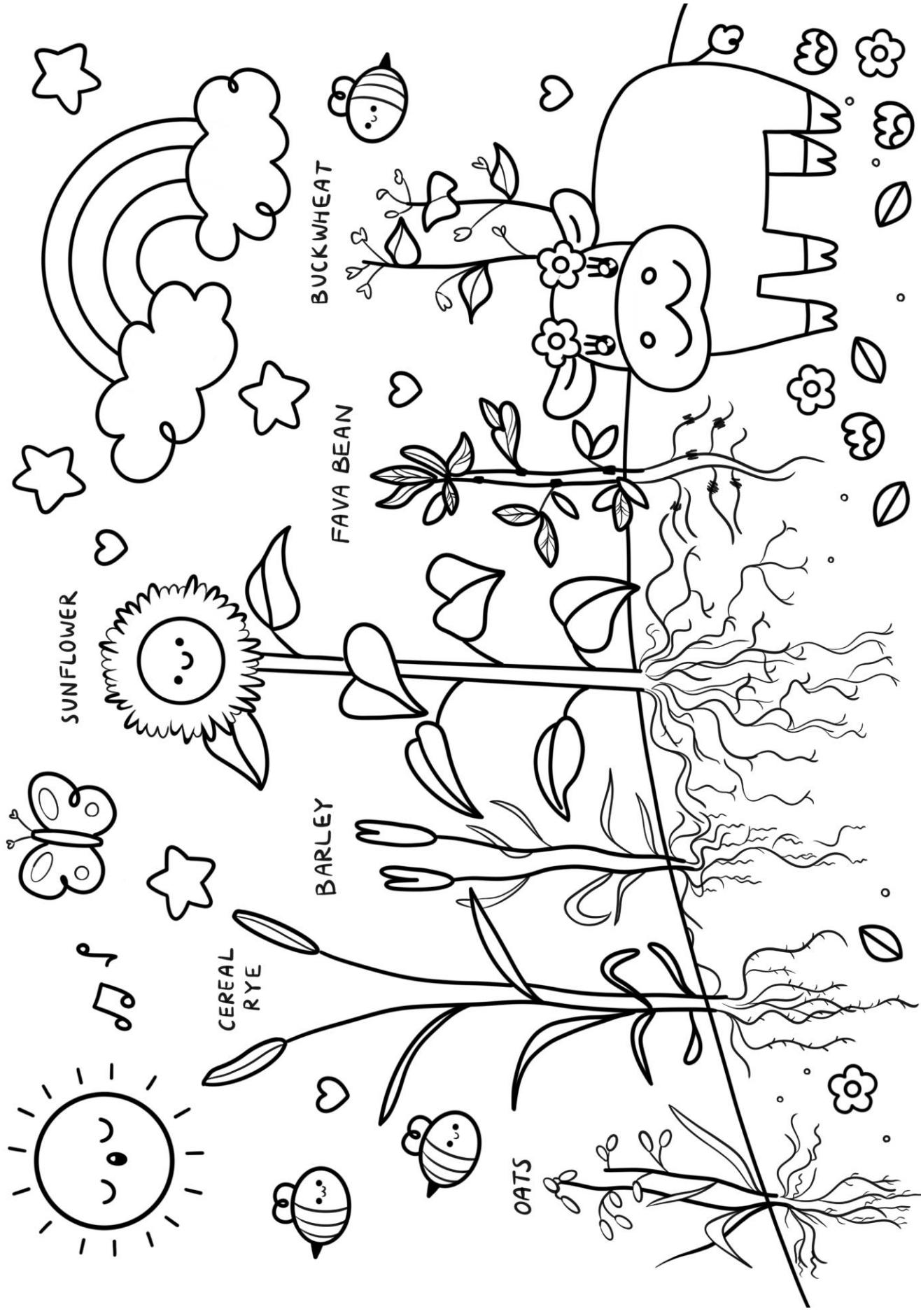
OATS

WHEAT

BUCKWHEAT

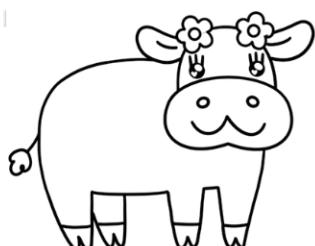
WINTERPEA

common COVER CROPS



COVER CROPS

WORD SEARCH



SUNFLOWER

RYE

OATS

BUCKWHEAT

FAVABEAN

BARLEY

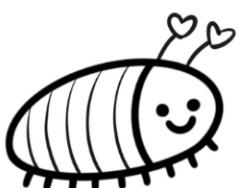
WHEAT

WINTERPEA

SOIL FOOD WEB

WORD SEARCH

E	A	R	E	N	T	P	L	A	N	T	S
B	A	C	T	E	R	I	A	C	E	A	O
S	O	R	A	O	D	G	S	H	M	S	S
O	Z	M	T	O	I	S	D	N	A	N	D
R	O	O	S	H	L	E	R	L	T	E	O
G	T	C	L	L	W	D	I	D	O	H	P
A	O	S	Y	N	A	O	B	T	D	E	O
N	R	M	A	N	D	M	R	I	E	A	R
I	G	N	U	F	L	G	I	M	S	L	H
C	E	L	A	I	U	L	I	N	S	T	T
Y	F	D	O	L	S	L	T	G	A	H	R
S	M	S	T	P	R	O	T	O	Z	O	A



PLANTS

ORGANIC

EARTHWORMS

NEMATODES

FUNGI

BACTERIA

ARTHROPODS

PROTOZOA

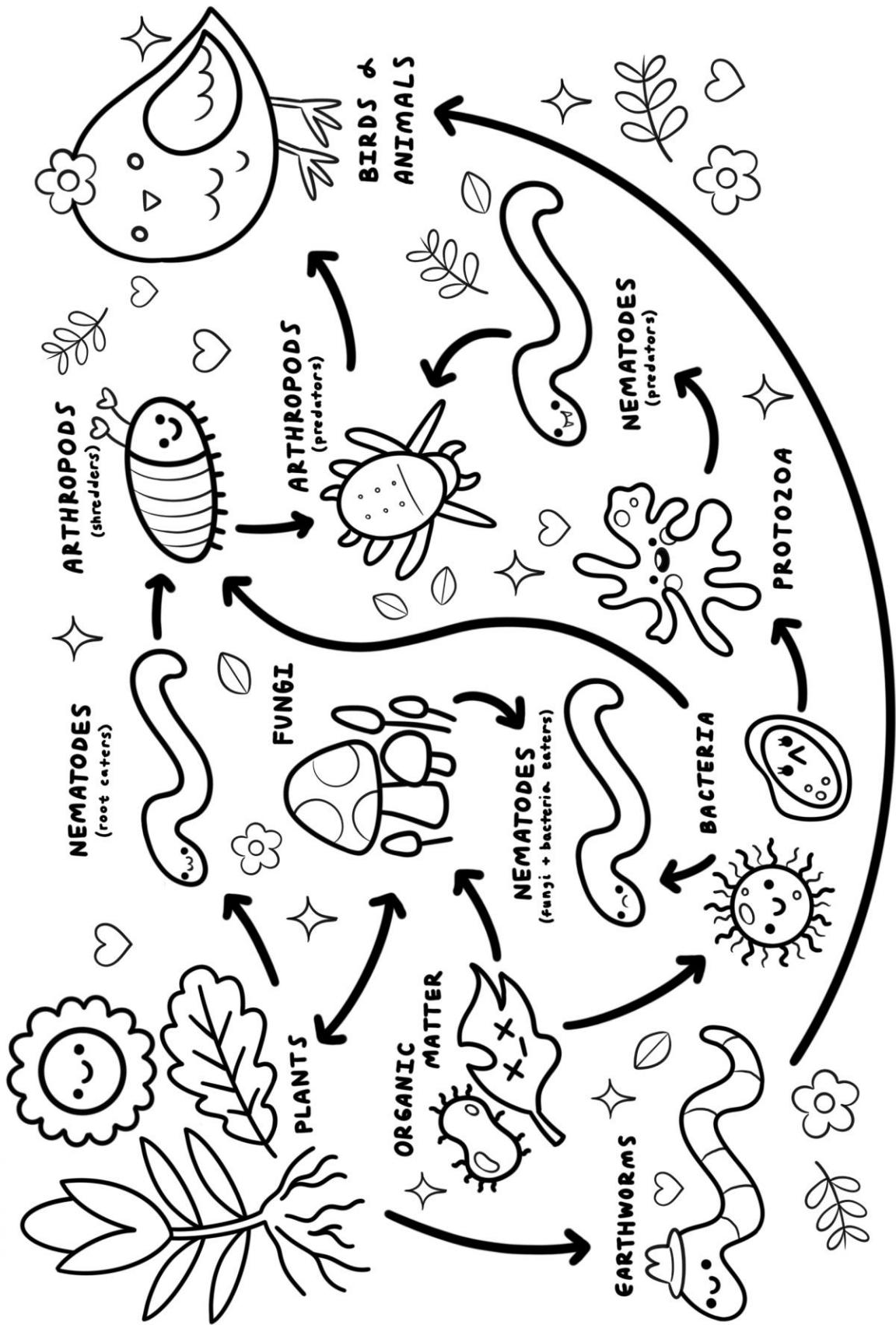
BIRDS

ANIMALS

SOIL

HEALTH

SOIL FOOD WEB



SOIL FOOD WEB

WORD SEARCH



PLANTS

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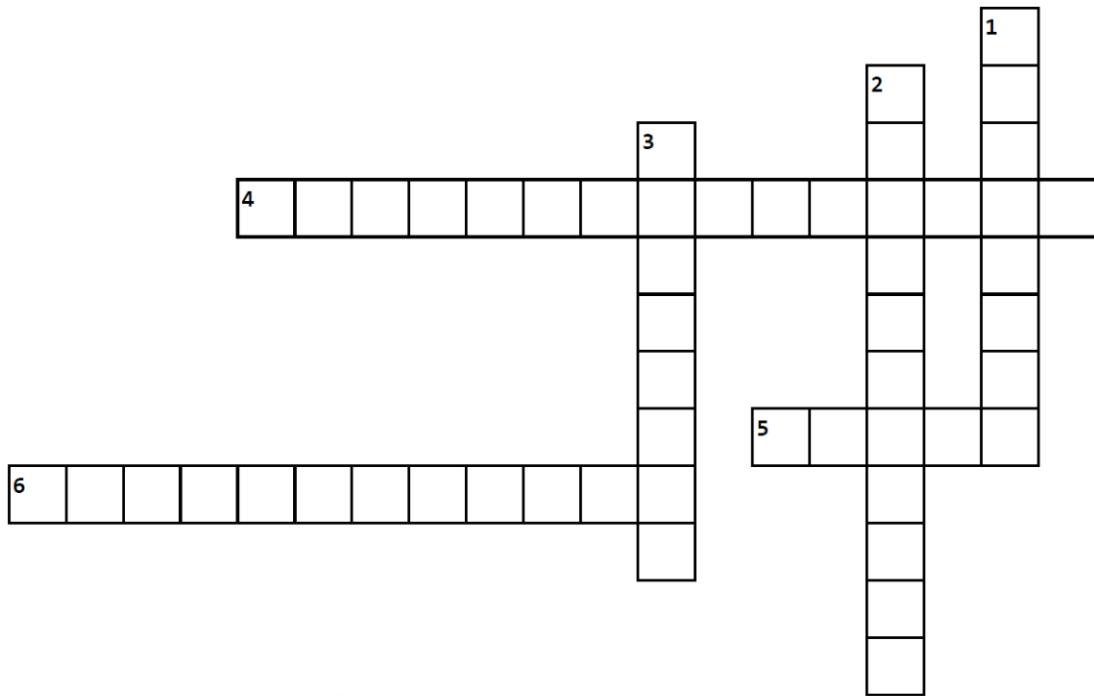
BIRDS

ANIMALS

SOIL

HEALTH

INDIGENOUS FARMING CROSSWORD PUZZLE



CHINAMPA DRY STONE WALLING
POLYCULTURE FLOATING RICE
MILPA TERRACES



INDIGENOUS FARMING CROSSWORD PUZZLE

ACROSS

4

A terracing method used in the Mediterranean region of Europe. Stone walls are built to prevent erosion and create microclimates for crops like olives, grapes, and citrus fruits.

5

A farming system used in Mesoamerica that involves intercropping *the three sisters*: maize, beans, and squash.

6

A rice farming technique used by communities in Southeast Asia that is adapted to local landscapes and water systems.

DOWN

1

Artificial islands or floating gardens built on shallow lakes and wetlands, primarily used for agriculture by the Aztec civilization in ancient Mexico.

2

Used with agroforestry by communities in the Amazon. Fruit trees, medicinal plants, and root vegetables are planted together to mimic the biodiversity of the rainforest.

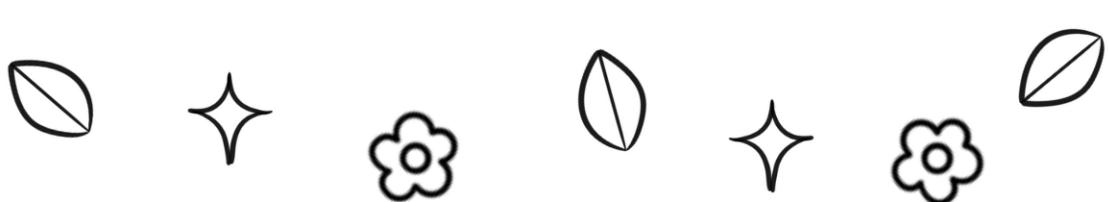
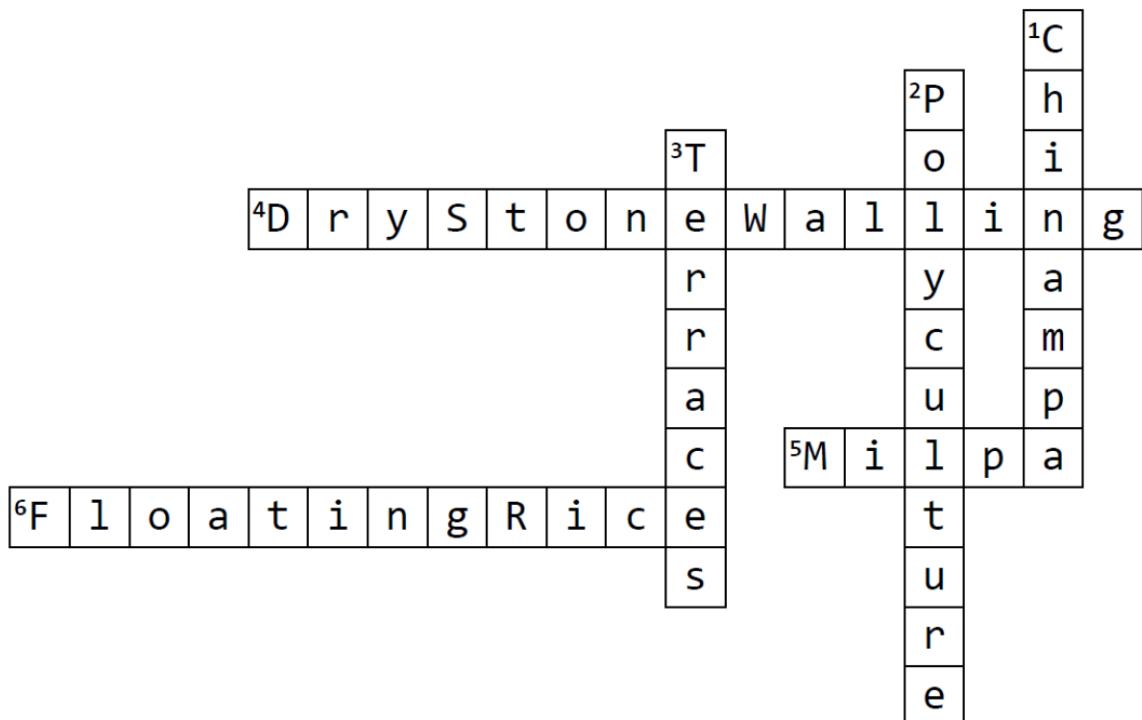
3

A farming technique used in mountainous regions such as the Andes in Peru. Flat, arable areas are built along steep mountain slopes.



INDIGENOUS FARMING CROSSWORD PUZZLE

ANSWER KEY



HOW DOES SOIL FORM?

CLORPT: FIVE FACTORS OF SOIL FORMATION

CL_____

Climate is weather over a long period of time. Soils develop fastest in warm, moist climates and slowest in cold or arid (dry) ones.



O_____

Plant roots spread, animals burrow, and bacteria eat, which changes how soil forms. These and other organisms help break down soil particles.



R_____

Relief refers to the shape of the land. The direction a hill faces changes how much sunlight the soil gets and how much water it holds. Deeper soils form at the bottom of a hill because gravity and water move soil particles downhill.



P_____ material

Parent material describes the properties in which soil forms. Soils created from weathering rock are different from soils that form in a dry lake bed.



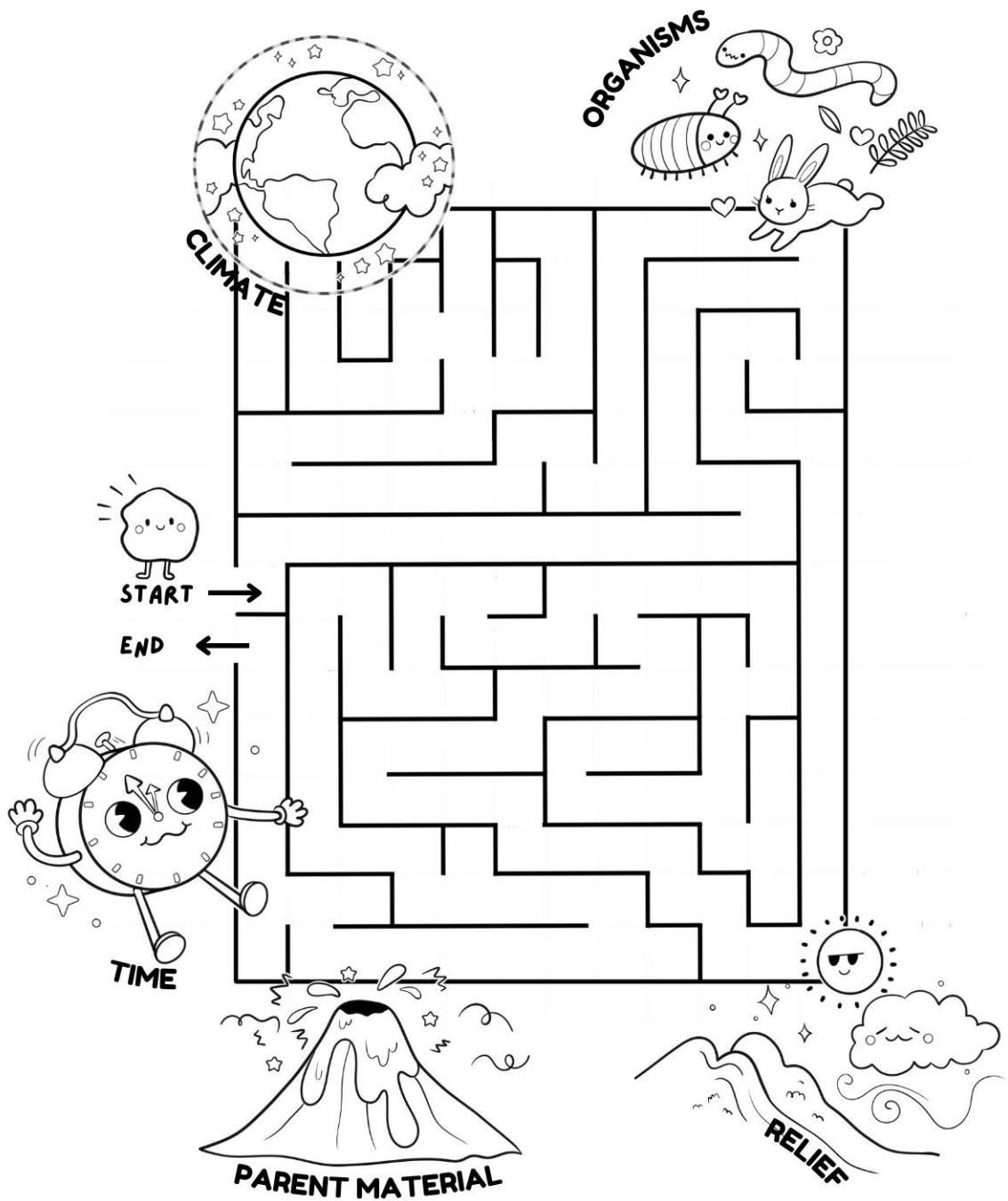
T____

Older soils differ from younger soils because they have had more time to develop.



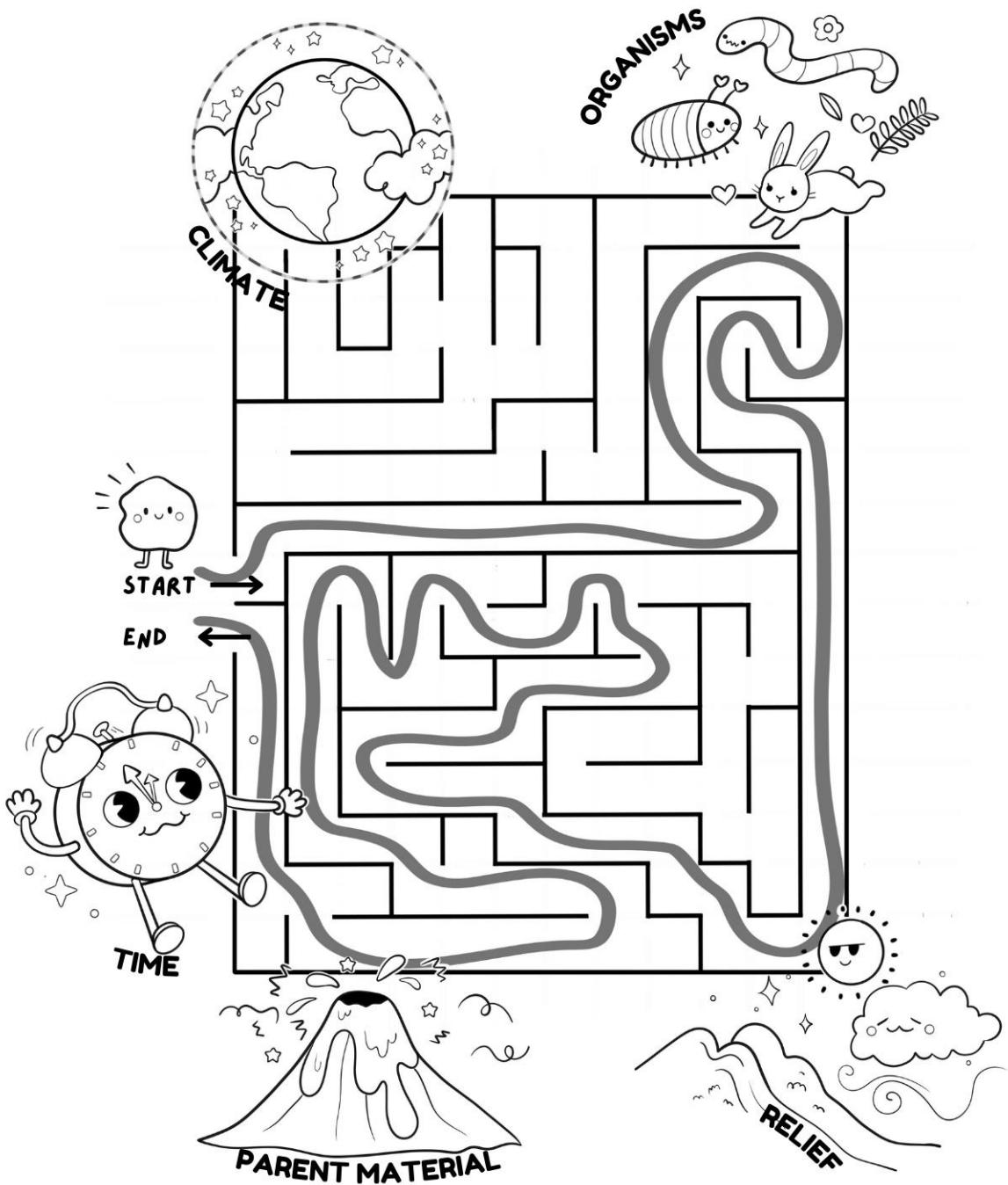
CLORP MAZE PUZZLE

HELP THE SOIL PARTICLE FORM BY JOURNEYING
THROUGH ALL FIVE FACTORS OF CLORP!



CLORP MAZE PUZZLE

ANSWER KEY



SOIL REGIONS

FILL IN THE MISSING WORDS FOR EACH SOIL REGION TYPE

1. Regions where moisture from rain or snow evaporates faster than it replenishes have _____ soils. These can be in both warm and cool places.
2. _____ soils are very productive and make up the world's "breadbaskets" where many types of grains are grown.
3. Temperate _____ store large amounts of carbon in trees and soil organic matter. When cut down, they release the stored carbon which can contribute to climate change.
4. _____ soils are found in all regions. They protect against floods and help clean out pollutants in the environment.
5. Tundra soils have a frozen layer called _____ which can prevent trees and other plants from growing deep roots.
6. Tropical soils are lush, but break down minerals and organic matter quickly and are not _____.



PRAIRIE

FORESTS

WETLAND

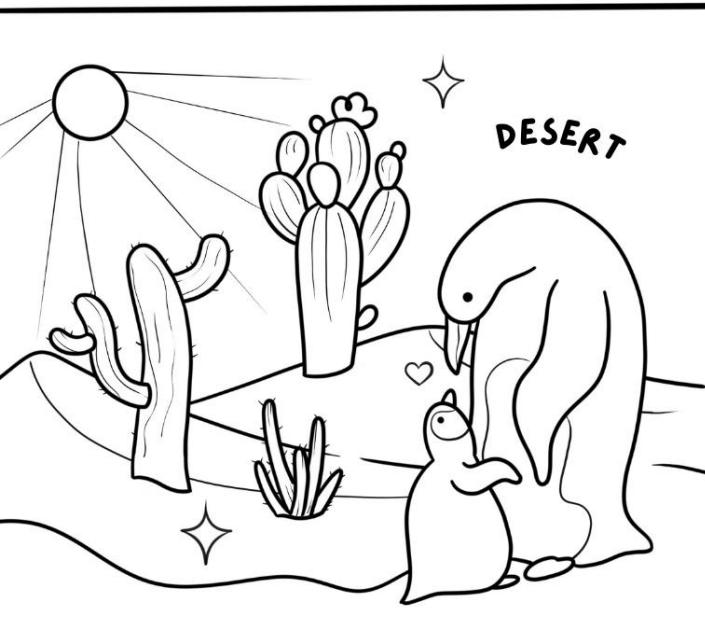
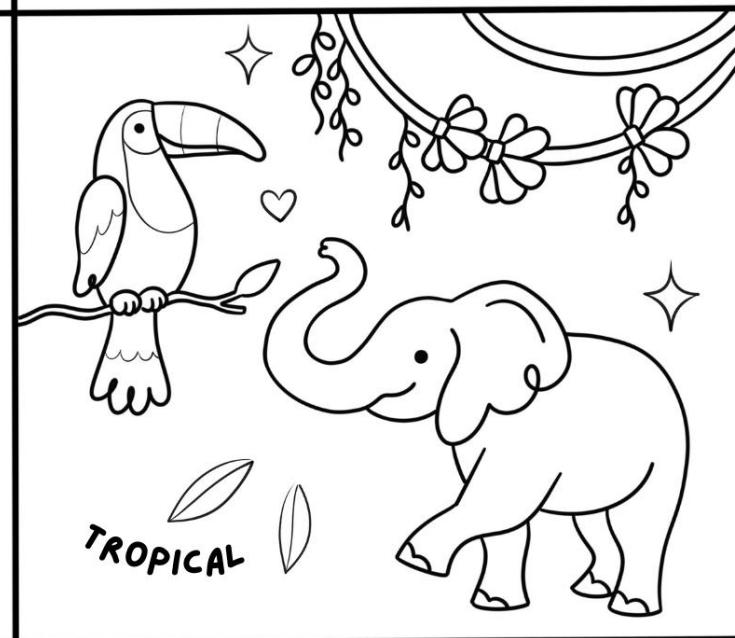
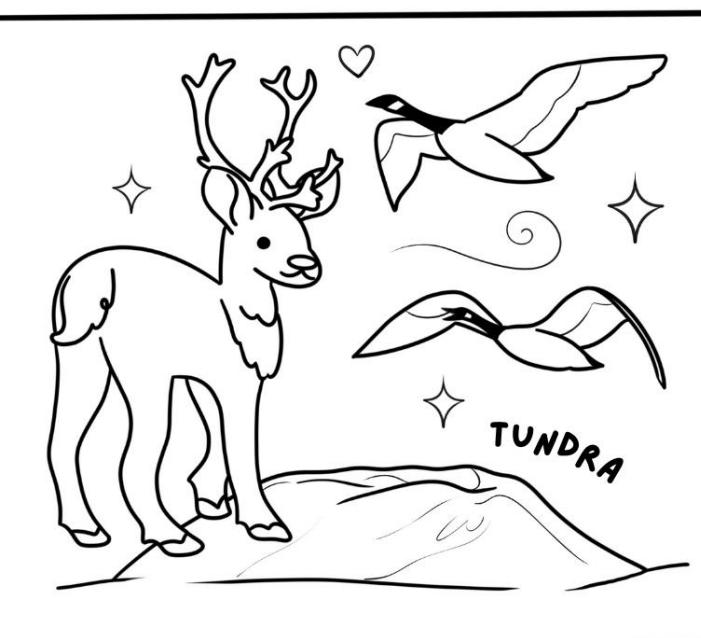
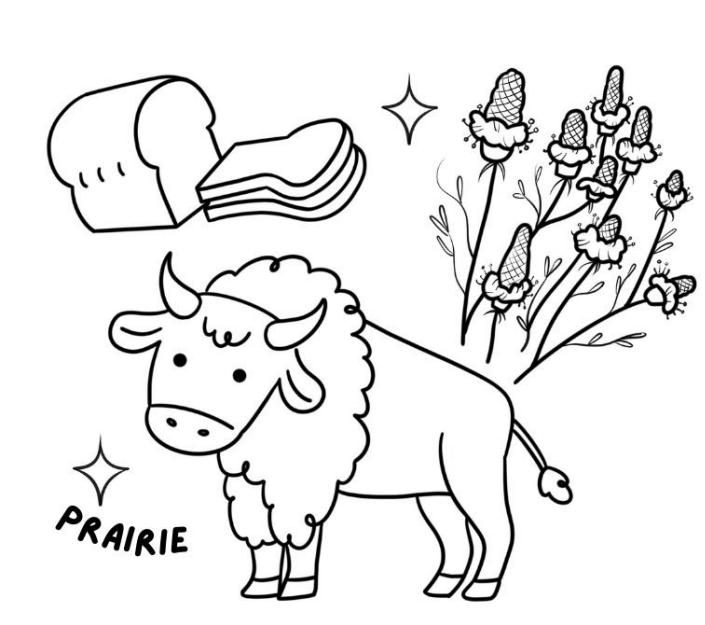


PERMAFROST

FERTILE

DESERT





WHAT PARTS OF PLANTS DO WE EAT?

LABEL THE DESCRIPTIONS BELOW WITH THE CORRECT NUMBER

- ___ Supports leaves and transports water and nutrients.
- ___ Anchors the plant and takes in water and nutrients.
- ___ An enlarged root or underground stem that stores food for the plant.
- ___ Contains the embryo for a new plant and stores food, both protected by a coat.
- ___ Carries out photosynthesis, the process in which plants product their own food in order to grow and reproduce
- ___ Develops from the flower's ovary to cover and protect the seeds. It can have fleshy or dry tissues.
- ___ The reproductive part of the plant that produces seeds after pollination.



1. FRUIT / POD

Banana, Apple, Cucumber,
Tomato, Cocoa bean, Green bean

2. LEAF

Lettuce, Cabbage,
Spinach, Parsley, Tea

3. STEM & STALK

Celery, Asparagus,
Sugarcane, Rhubarb

4. FLOWER & BUD

Broccoli, Artichoke

5. SEED

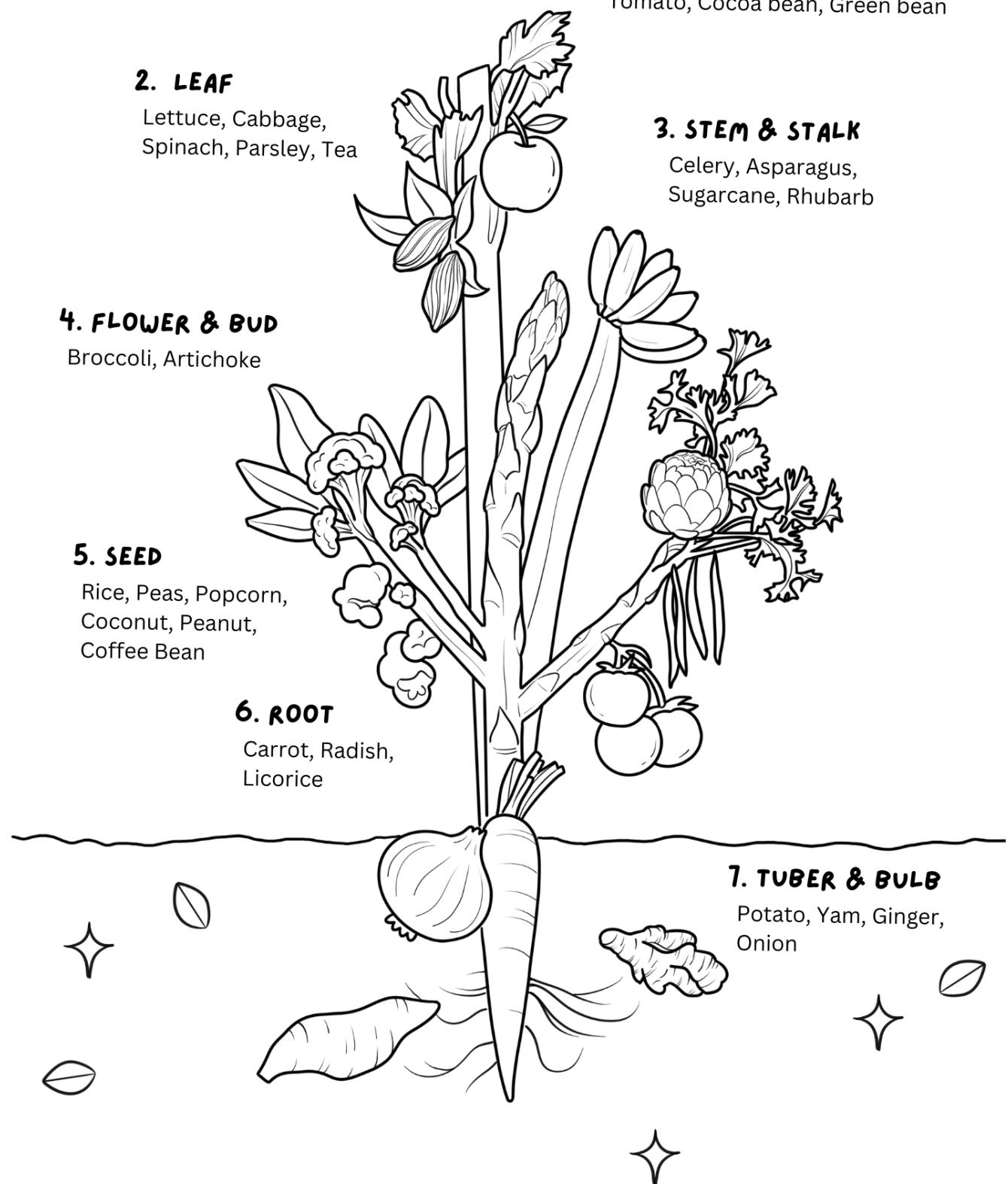
Rice, Peas, Popcorn,
Coconut, Peanut,
Coffee Bean

6. ROOT

Carrot, Radish,
Licorice

7. TUBER & BULB

Potato, Yam, Ginger,
Onion



YEAR IN BLOOM

COLOR THE FLOWERS IN THE POLLINATOR GARDEN
ACCORDING TO THE CHART BELOW

Flower



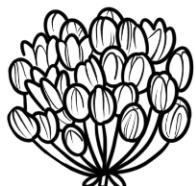
Golden Alexander



Scarlet Globemallow



Prairie Rose



Butterfly Milkweed



Stiff Sunflower



New England Aster

Blooming Color

Yellow

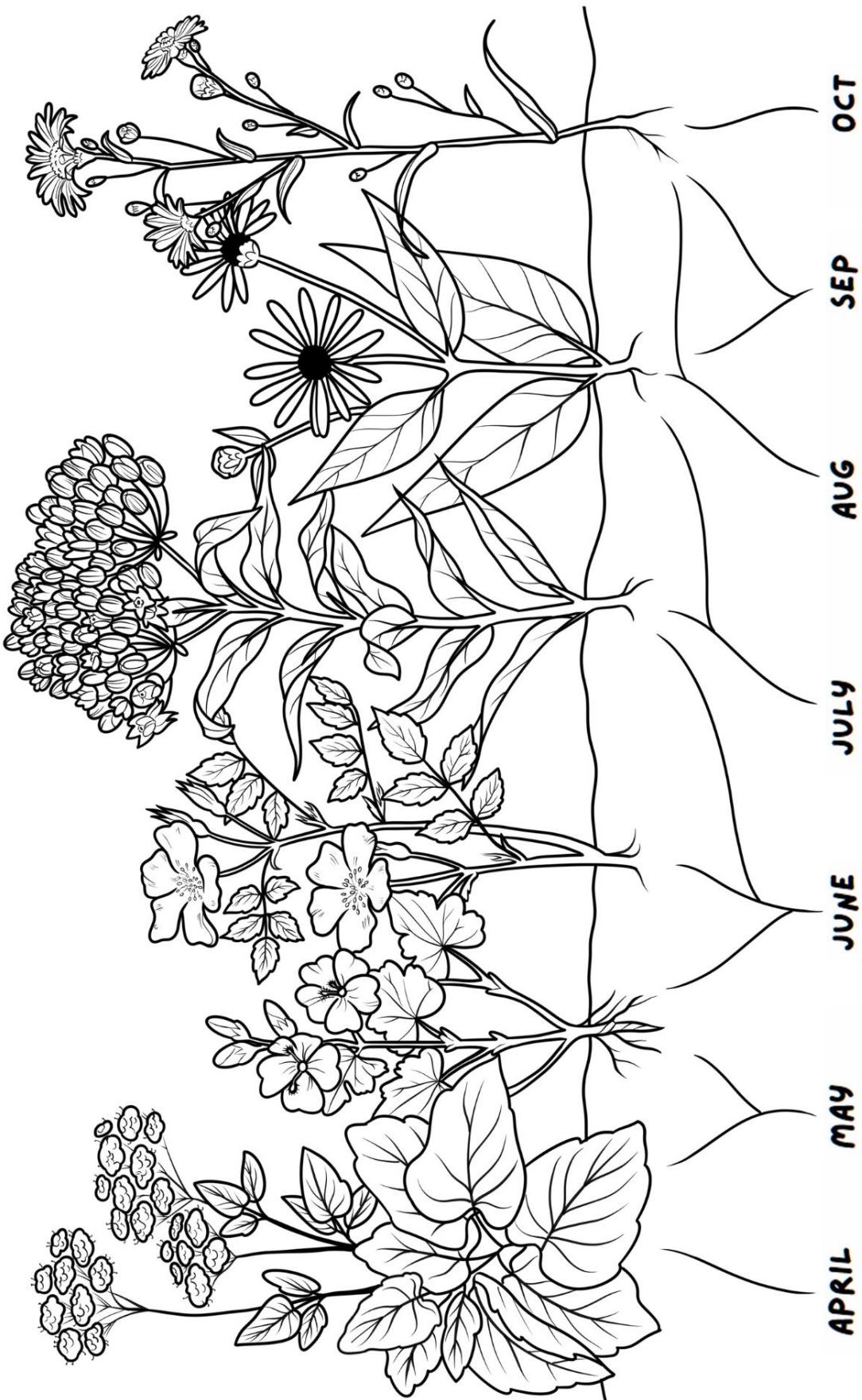
Red

Purple-Pink

Orange

Yellow

Dark Blue

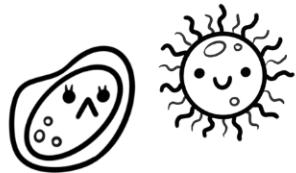


SOIL BIOLOGY

FINISH SPELLING THE WORDS

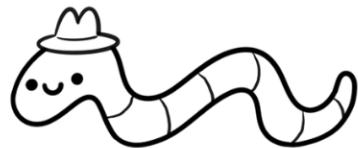
B ___ teria

Single-celled organisms that are microscopic ranging in shape from spheres, rods, to spirals.



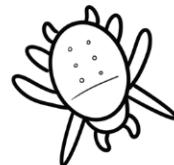
___ rthw ___ s

Long, thin segmented animals that move through the soil aerating and enriching it.



Mit _ s

Eight-legged animals too small to see with the unaided eye that feed on smaller organisms and soil organic matter.



Nema _____ s

Tiny, non-segmented worm-like organisms that mostly live on other organisms or soil organic matter.



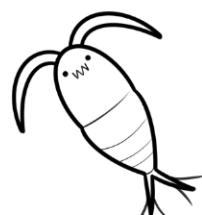
_ rot _ zoa

Single-celled organisms larger than bacteria that move in water films and feed on bacteria and soil organic matter.



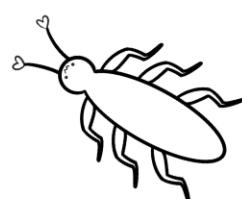
Ro__ _fers

Microscopic animals found in many freshwater environments and in moist soil that move by swimming or crawling.



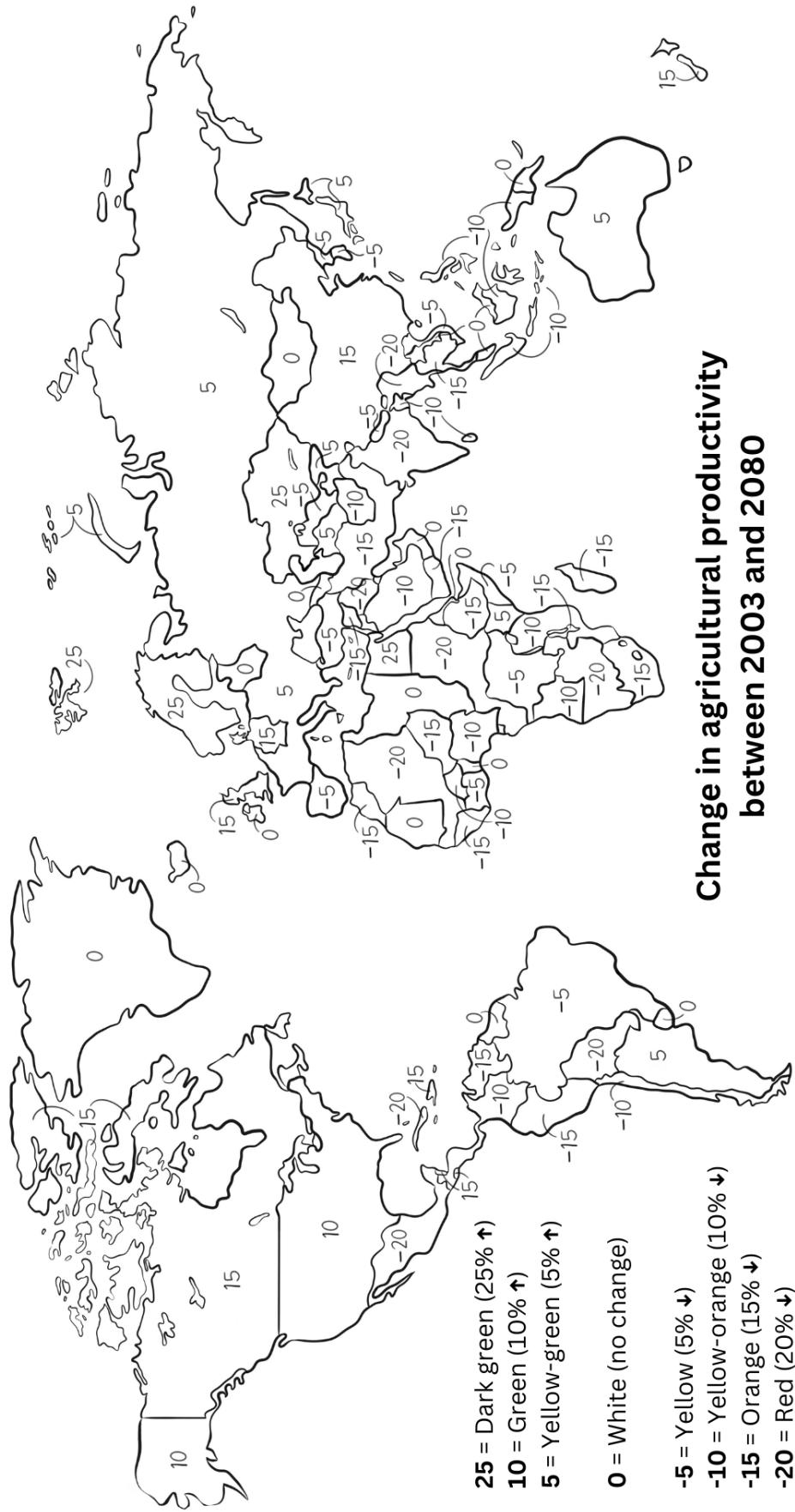
Spr ___ tails

Six-legged animals that often have a tail-like structure folded beneath the body that can be used for jumping when the animal is threatened.



IMPACT OF CLIMATE CHANGE ON AGRICULTURAL YIELDS

FILL IN EACH COUNTRY WITH THE MATCHING COLOR ACCORDING TO THE NUMBERS



Change in agricultural productivity
between 2003 and 2080