



Title: Exploring Radishes!

Grade Level: K-2

GPS/CC Standards:

WK2. Students will use a combination of drawing, dictating, and writing to compose informative/explanatory texts in which they name what they are writing about and supply some information about the topic.

W12. Students will write informative/explanatory texts in which they name a topic, supply some facts about the topic, and provide some sense of closure.

W22. Students will write informative/explanatory texts in which they introduce a topic, use facts and definitions to develop points, and provide a concluding statement or section.

SKCS3. Students will use tools and instruments for observing, measuring, and manipulating objects in scientific activities.

a. Use ordinary hand tools and instruments to construct, measure

S1CS3. Students will use tools and instruments for observing, measuring, and manipulating objects in scientific activities.

a. Use ordinary hand tools and instruments to construct, measure, and look at objects.

S2CS3. Students will use tools and instruments for observing, measuring, and manipulating objects in scientific activities.

a. Use ordinary hand tools and instruments to construct, measure, and look at objects.

KMDB3. Students will write informative/explanatory texts in which they introduce a topic, use facts and definitions to develop points, and provide a concluding statement or section.

1MDC4. Students will organize, represent, and interpret data with up to three categories; ask and answer questions about the total number of data points, how many in each category, and how many more or less are in one category than in another.

2MDD10. Students will draw a picture graph and a bar graph (with single-unit scale) to represent a data set with up to four categories. Solve simple put-together, take-apart, and compare problems using information presented in a bar graph.



Materials Needed:

- Book “Carrots Grow Underground” by Mari Schuh
- Radish Seed Packet
- Enlarged Seed Packet Image (included)
- Seed Catalog (image of radish page included)
- Magnifying Glasses
- Rulers
- Two or Three Varieties of Radishes
- Five Senses Chart (included)
- Poem Worksheet (included)
- Crayons

Time Needed: 45 min

Goal: Students are introduced to different types of radishes and connect their radish observation to writing and math.

Objectives:

- Students observe and learn about several varieties of radishes.
- Students record observations and use them to write a poem.
- Students create a line plot to record the results of a class tasting and interpret the data.

Outline

- Engage: Read “Carrots Grow Underground” by Mari Schuh (<http://www.amazon.com/Carrots-Grow-Underground-Fruits-Vegetables/dp/1429661852>)
- Explore: Gather information from observing radishes
- Explain: Gather information from radish seed packets
- Extend: Plant and taste radishes
- Evaluate: Write a poem about radishes

Lesson Plan

Engage (5 min):

- Read “Carrots Grow Underground” by Mari Schuh.
- Ask students what part of the plant do you eat when you eat radishes (root).
- Ask students what other roots you eat (carrots, beets, turnips, parsnips).



Explore (10 min):

- Distribute radishes and observation tools.
- *Small group discussion* – What information can you gather about radishes?
 - Kindergarten – Use your five senses to gather information and make inferences about your radishes.
 - 1st Grade – Use your five senses and your magnifying glass to gather information and make inferences about your radishes.
 - 2nd Grade – Use your five senses, your magnifying glass, and a ruler to gather information and make inferences about your radishes.

Explain (5 min):

- Distribute radish seed packets and seed catalogs.
- *Small group discussion* – What additional information can you gather about radishes?
 - Kindergarten – Look at the pictures. What additional information can you gather about radishes?
 - 1st Grade – Look at the pictures and listen to the words. What additional information can you gather about radishes?
 - 2nd Grade – Look at the pictures and read to the words. What are two adjectives used to describe this variety of radishes?

Extend (10 min):

- Taste two or three different kinds of radishes.
- Create a bar graph based on taste test results.
- Evaluate the bar graph based on the taste test results.
 - Which type of radish was the class favorite?
 - Which type of radish was the least favorite?
 - How many more/less students like (type 1) more than (type 2)?
 - How would the results change if (student) changed their vote to (type 1) instead of (type 2)?

Evaluate (10 min):

- Write a poem about radishes.
 - Kindergarten – Five Senses Poem
 - 1st Grade – Acrostic Poem
 - 2nd Grade – Haiku
- Illustrate poem with a scientific drawing of a radish.



Rubrics






WK2	Appropriately describes look	___ / 15
WK2	Appropriately describes feel	___ / 15
WK2	Appropriately describes sound	___ / 15
WK2	Appropriately describes smell	___ / 15
WK2	Appropriately describes taste	___ / 15
WK2	Appropriately and neatly illustrates	___ / 25
TOTAL		___ / 100

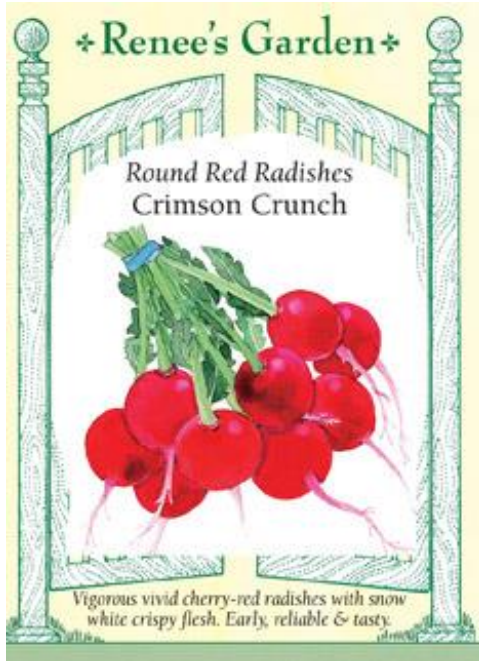
W12	Appropriate descriptor (10 pts. each)	___ / 70
W12	Correct spelling	___ / 10
W12	Neatness	___ / 10
W12	Appropriately and neatly illustrates	___ / 10
TOTAL		___ / 100

W22	Appropriate content	___ / 60
W22	Correct syllable distribution	___ / 10
W22	Correct spelling	___ / 10
W22	Neatness	___ / 10
W22	Appropriately and neatly illustrates	___ / 10
TOTAL		___ / 100



Name: _____

Touch	Taste	Sight	Smell	Hear
				



5376

Round Red Radishes Crimson Crunch

COLD WINTERS April - May
MILD WINTERS Feb - May
SUN/SHADE Full sun
SOW SEEDS 1 inch apart / 1/2 inch deep
DAYS TO GERMINATE 5 - 7 days
DAYS TO HARVEST Approx. 28

START SEEDS OUTDOORS

In early spring as soon as ground can be worked, sow radish seeds in well-worked, fertile soil in full sun. Space seeds 1 inch apart in wide rows 6 inches apart. Cover 1/2 inch deep. Keep soil evenly moist and well weeded. If first sowing comes up unevenly, replant right away. Sow in late summer for a fall crop.

GROWING NOTES

Sow this quick growing, cool season crop wherever you intend to plant heat lovers later. Radishes thrive and have crisp flesh and the best mild flavor given consistent moisture. Sow small amounts a week apart to mature in warm but not hot weather. Thin quick-growing seedlings early to 2 inches apart so

roots have room to size up. Protect radishes with floating row covers if marauding birds or flea beetles that chew holes in the leaves are a problem.

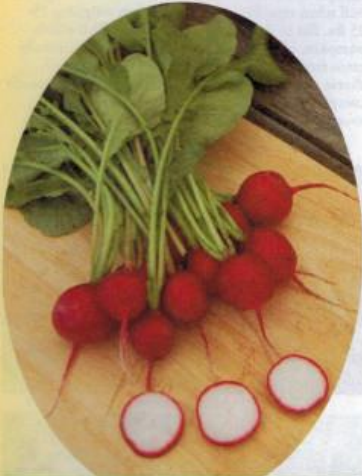
HARVEST AND USE

Harvest radishes when roots are the size of large marbles. If weather turns unexpectedly hot, pull, cut off tops, and store in the refrigerator for up to 3 weeks. Radishes will be spicier in hot weather and milder grown in cooler conditions. Combine sliced radishes, scallions and fresh dill or parsley for a great salad. Make delicious open-faced sandwiches on whole grain bread spread with sweet butter and topped with sliced radishes.

✦ Renee's Garden ✦

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 888-880-7228 • www.reneesgarden.com

Radishes *Raphanus sativus*



NEW 2874 Celesta F1

RADISH PLANTING INFO: Seeding depth: 1/4-1/2", Garden- Plant spacing: 1", Row spacing: 8-12", Daikon- Plant spacing: 4-6", Row spacing: 12-16".

CULTURAL INFO: Radishes are hardy annuals. They can be direct seeded as soon as soil can be worked and are better adapted to the cooler temperatures and shorter days of spring and fall. Optimal soil temperature for germination is 65-85°F. Seedlings emerge within a few days. Thin if necessary to ensure even sizing. Plant every 10 days for a continual supply. Harvest radishes on time as they do not hold well in the field, especially in warm weather. Topped radishes will keep good quality for 3-4 weeks if stored at near freezing temperatures with high humidity in semi-permeable containers.

DISEASE & PESTS: Like other crucifers, radishes can be subject to fungal diseases in wet seasons, such as Alternaria Leaf Spot and White Mold (sclerotinia). Flea beetles can present a problem, particularly for young plants, by chewing small holes in the leaves. Use floating row cover to prevent insect damage.

SEED SPECS: 1,875-3,625 (2,750 avg) seeds/oz., 30-58M (44M avg) seeds/lb. Seeding rate: Garden- 2,200 seeds/100' single row (-3/4 oz/100' single row), 958M seeds/acre (-22 lb/acre) using 20 seeds/ft, 12" row spacing. Daikon- 660 seeds/100' (-1/4 oz/100' single row), 288M seeds/acre (-6.5 lb/acre) using 6 seeds/ft, 12" row spacing. M= 1,000



2850 Cherry Belle

NEW 2874 Celesta F1 Hybrid 25 days

Excellent vigor, uniformity and bolt tolerance in a red round radish. We're excited to offer the first organically available hybrid radish, which received the highest rating in our 2011 red radish trials across all seasonal slots - spring, summer and fall. We saw hardly any bolting or splitting from this variety, even when allowing the roots to grow quite large. Foliage is strong, compact and upright for easy harvest. Celesta is attractive when sliced; vivid red skin contrasts nicely with bright white flesh. Interior is juicy, with a nice radish crunch.

2850 Cherry Belle 25 days

Classic, smooth, red-skinned bunching radish. AAS winner in 1949. Makes uniform spheres 3/4 - 1" with crispy white flesh. Less subject to pithiness than other radishes.

2873 Rudolf 25 days

All the vigor and uniformity of a hybrid in this highly-selected open-pollinated variety. Rudolf makes a crisp, nicely round radish with excellent resistance to cracking and pithiness. Good for both winter and spring production. Short foliage.

2863 Purple Plum 25 days

Bright purple skin covers firm white flesh. Texture is crisp and juicy. Roots hold up well in the field and do not crack easily. Hardy and adaptable.

2875 Valentine's Day Mix 25 days

A well-balanced mix of red, pink, purple, and white round garden radishes with a splash of French Breakfast to liven it up! Sure to create a heart-felt sensation.



2873 Rudolf



2863 Purple Plum

2875 Valentine's Day Mix



2860 French Breakfast

2860 French Breakfast 26 days

HEIRLOOM An oblong, blunt-tipped radish, half red on top and white on the bottom. Has a healthy radish spiciness and quality. Can become pithy if harvested late. Average 2" long.

2870 Pink Beauty 27 days

Bright pink radish with a uniform round to oval shape and medium tops. Crisp white flesh has a distinctive and delicious flavor. Highly resistant to pithiness.

2866 White Icicle 27 days

Slender garden radish with pointed roots resembles a miniature daikon. Roots average 3-4" long and have a mild radish flavor and crunchy bite. Smooth, medium-size tops can be used as salad greens.

2865 White Beauty 30 days

Pure white roots are perfectly round globes averaging 1.5" in diameter. Strong green tops are great for bunching. Bunch with Purple Beauty and Pink Beauty for a colorful display. Best grown in spring or fall.



2870 Pink Beauty



2866 White Icicle



2865 White Beauty



By: _____

Radishes look _____.

Radishes feel _____.

Radishes sound _____.

Radishes smell _____.

Radishes taste _____.



By: _____

R _____

A _____

D _____

I _____

S _____

H _____



By: _____

(5 syllables)

(7 syllables)

(5 syllables)