

Aligning School Gardens with Academic Curriculum

Webinar Series

September 16, 2020 3:30pm

Professional Standards Learning Code: 1230





Arizona Department of Education (ADE)

This training was sponsored by the Arizona Department of Education (ADE) Health and Nutrition Services Division (HNS).

Intended Audience

This training is intended for **School Food Authorities (SFAs)** operating the **National School Lunch Program (NSLP)** and the school garden leaders and teachers that support them.

Professional Standards

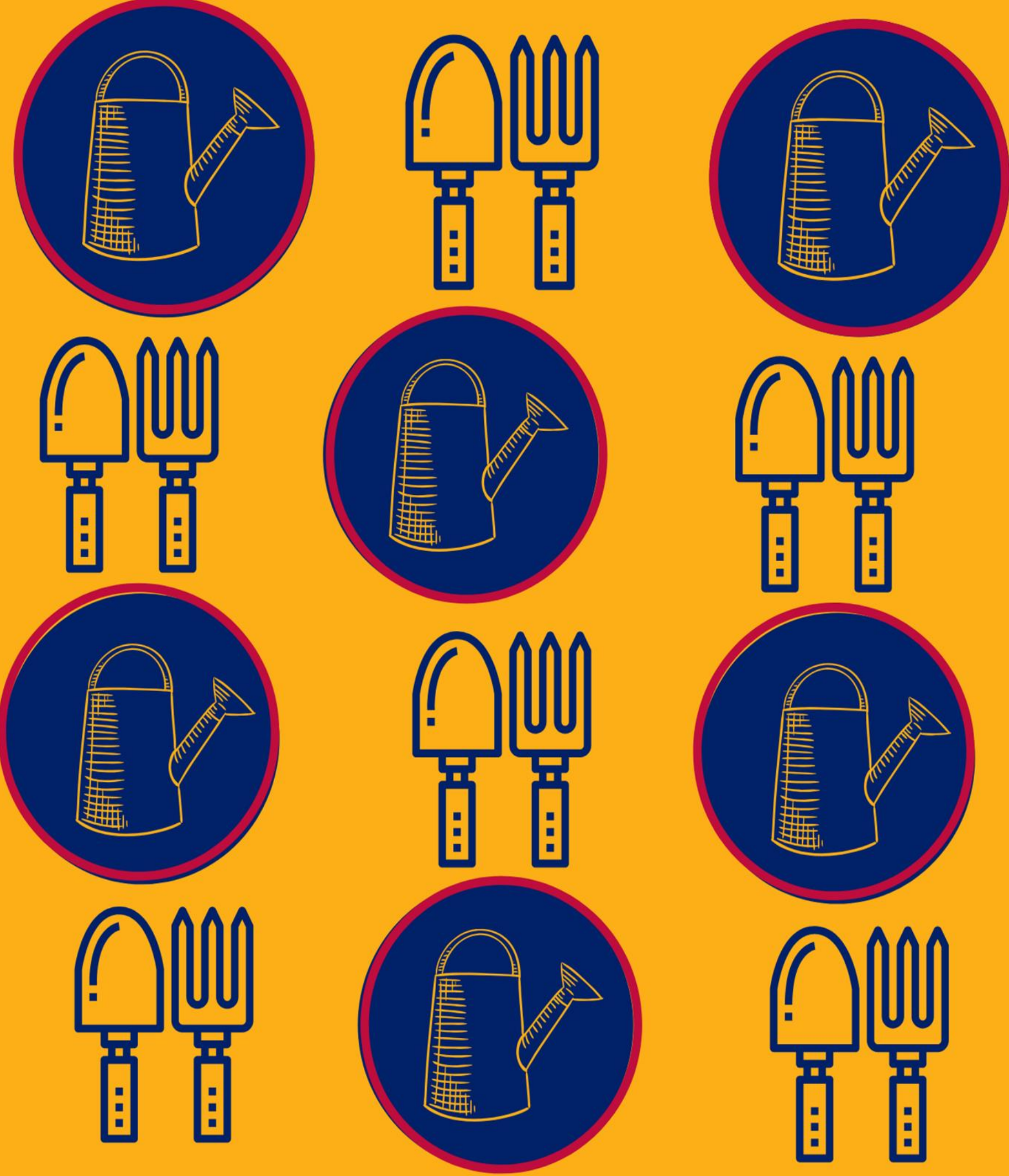
Information to include when documenting this training for Professional Standards:

Training Title: Aligning School Gardens with Academic Curriculum

Key Area: 1000- Nutrition

Learning Codes: 1230

Length: 1 hour



75%

In February 2020 past attendees of the 2019 Arizona School Garden Sustainability series of, responded wanting to learn more about the alignment of school garden activities within academic curriculum.



Gigette Webb, M.Ed.

**University of Arizona, Cooperative Extension Service
Area Associate Agent Agricultural Literacy & STEM
Education Program**

Thank you for joining me today!

Bio: The Agricultural Literacy & STEM Education Program is a statewide program that is based out of the Maricopa County Cooperative Extension Office. As the UA CES Agent for Ag Literacy & STEM Education, Gigette is also the state contact for the National Ag in the Classroom Program. This program serves the community and students by empowering educators through lesson plans, relationships, and other resources to promote and teach agricultural literacy throughout the state. Prior to her current role with the University of Arizona, Gigette brings 23 years of classroom experience from both private and public schools.

Overview

Introduction to Agriculture Education

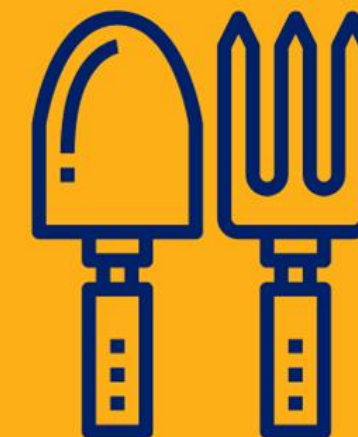
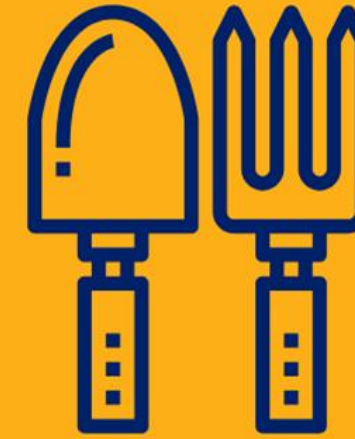
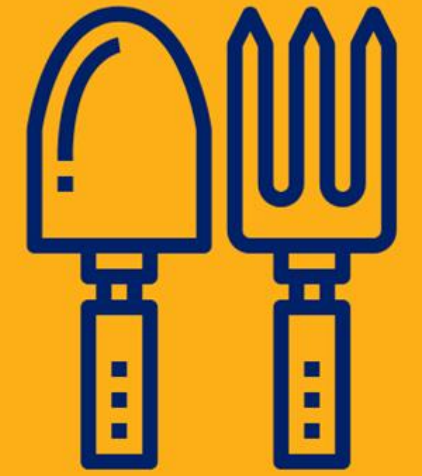
- Land Grant Brief Review
- Arizona agriculture – top commodities
- Agriculture Education Importance

Academic Standard Alignment

- Example activities
- Examples Lessons
- Matrix Reveal (draft)
- Resources

Professional Development Opportunities 2021

Website Navigation



Introduction to Agriculture Education

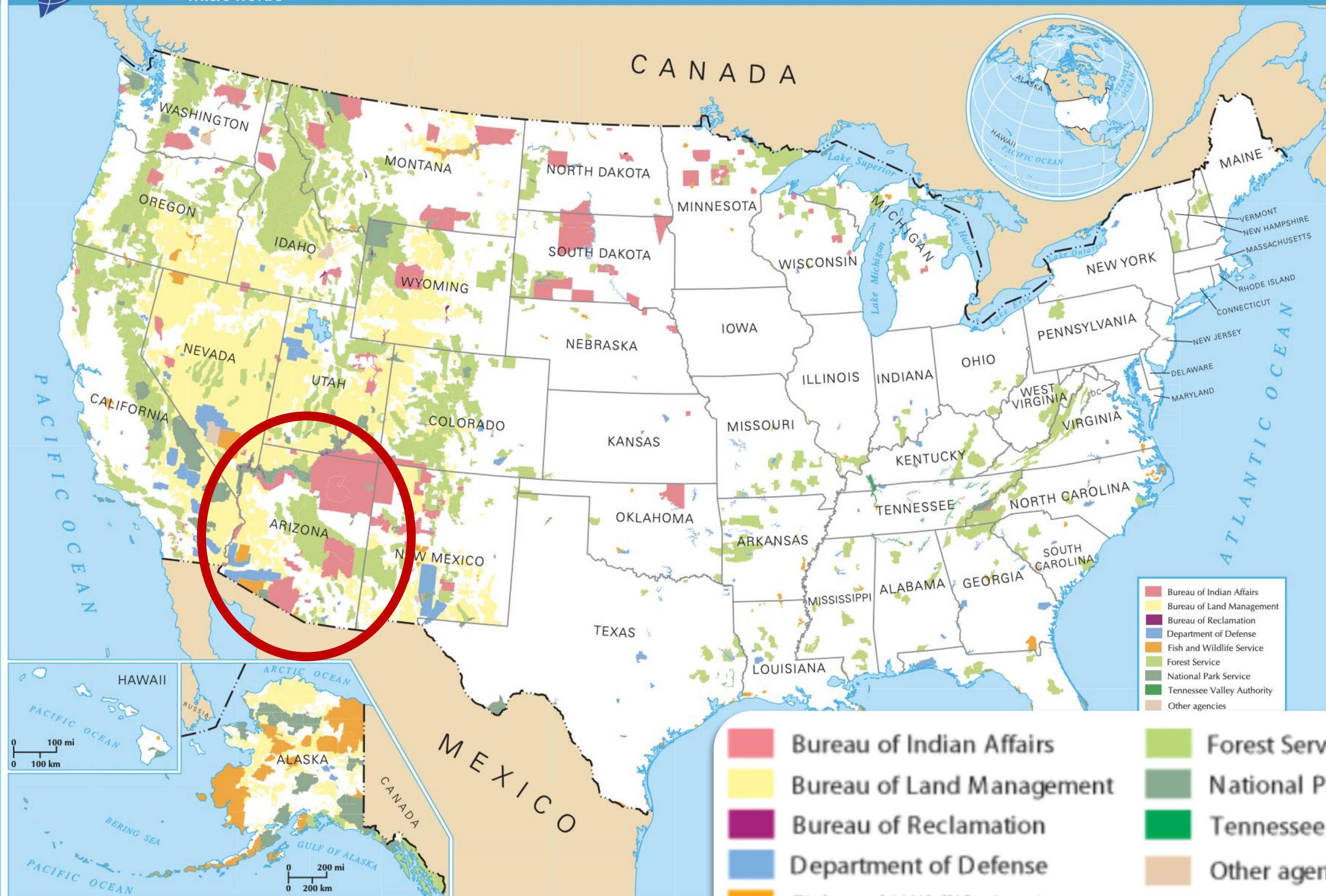




United States Department of Agriculture
Cooperative State Research, Education, and Extension Service

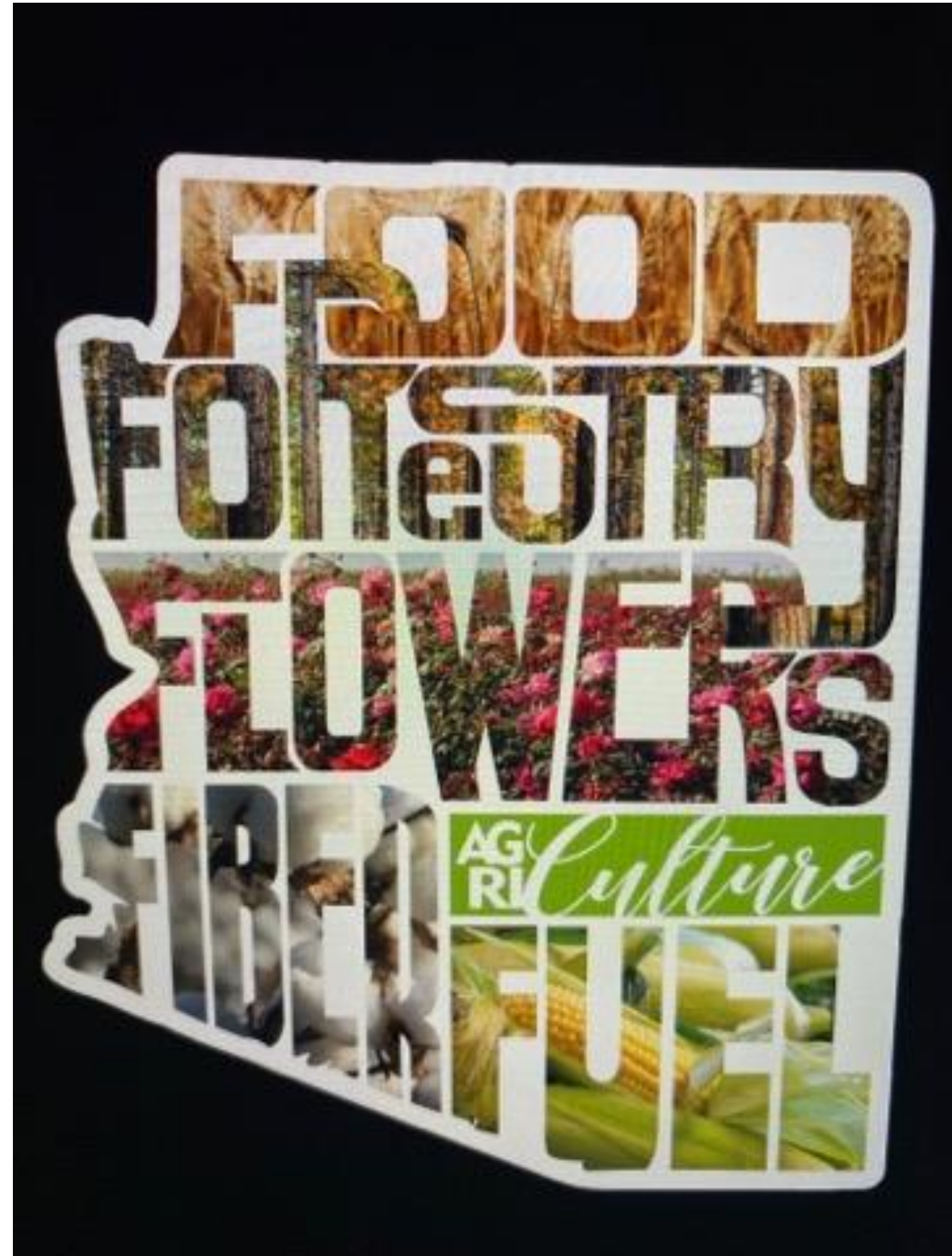
Land-Grant Colleges and Universities





5 F's of Agriculture

- Food
- Fiber
- Forestry
- Floriculture
- Fuel



\$23.3 Billion Industry

2019 – Top Crops by \$ Value

- #1 – Lettuce
- #2 – Hay
- #3 – Cotton
- #4 – Cauliflower
- #5 – Dates
- #6 – Broccoli
- #7 – Melons
- #8 – Pecans
- #9 – Corn
- #10 – Lemons
- #11 – Wheat

2019 – Largest Crops by Acres


- #1 – Hay/alfalfa
- #2 – Cotton





Food System





**“Despite all our accomplishments,
we owe our existence to a six inch
layer of topsoil and the fact it rains”**

SCIENCE

LANGUAGE
ARTS

SOCIAL
STUDIES

INCORPORATING AGRICULTURE TO ENGAGE STUDENTS

MATH

HEALTH

ART

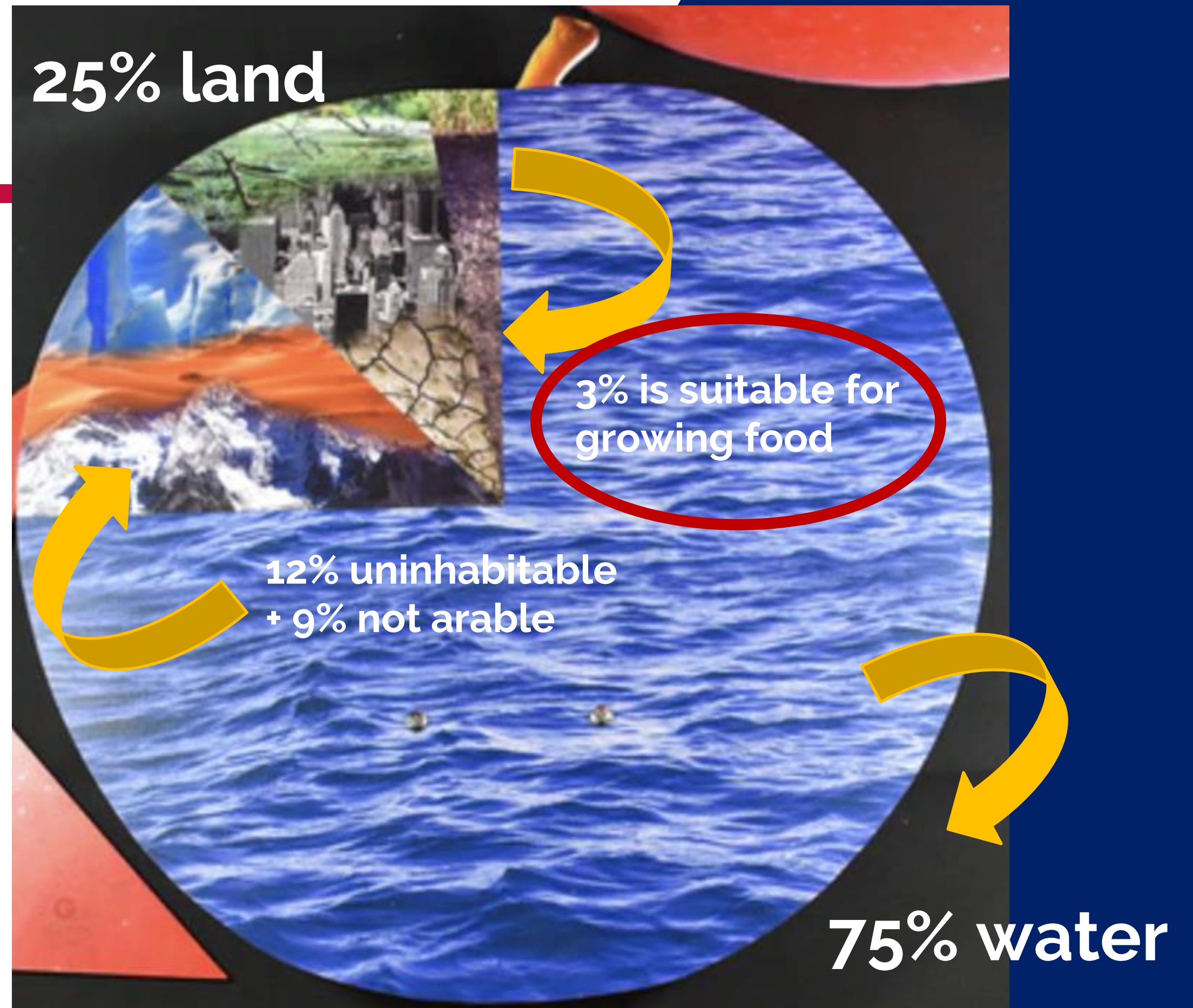
Lesson: Soil – Apple Land Use

**No land = No Food,
Fiber, Fuel**



Lesson: Soil – Apple Land Use

- $\frac{3}{4}$ - Covered by water
- $\frac{1}{4}$ - Represents land area
- Of that...
- $\frac{1}{8}$ is uninhabitable land
- $\frac{3}{32}$ is habitable but NOT arable land
- $\frac{1}{32}$ is arable and has potential to grow crops – this soil is what we depend on for food production



Soil functions

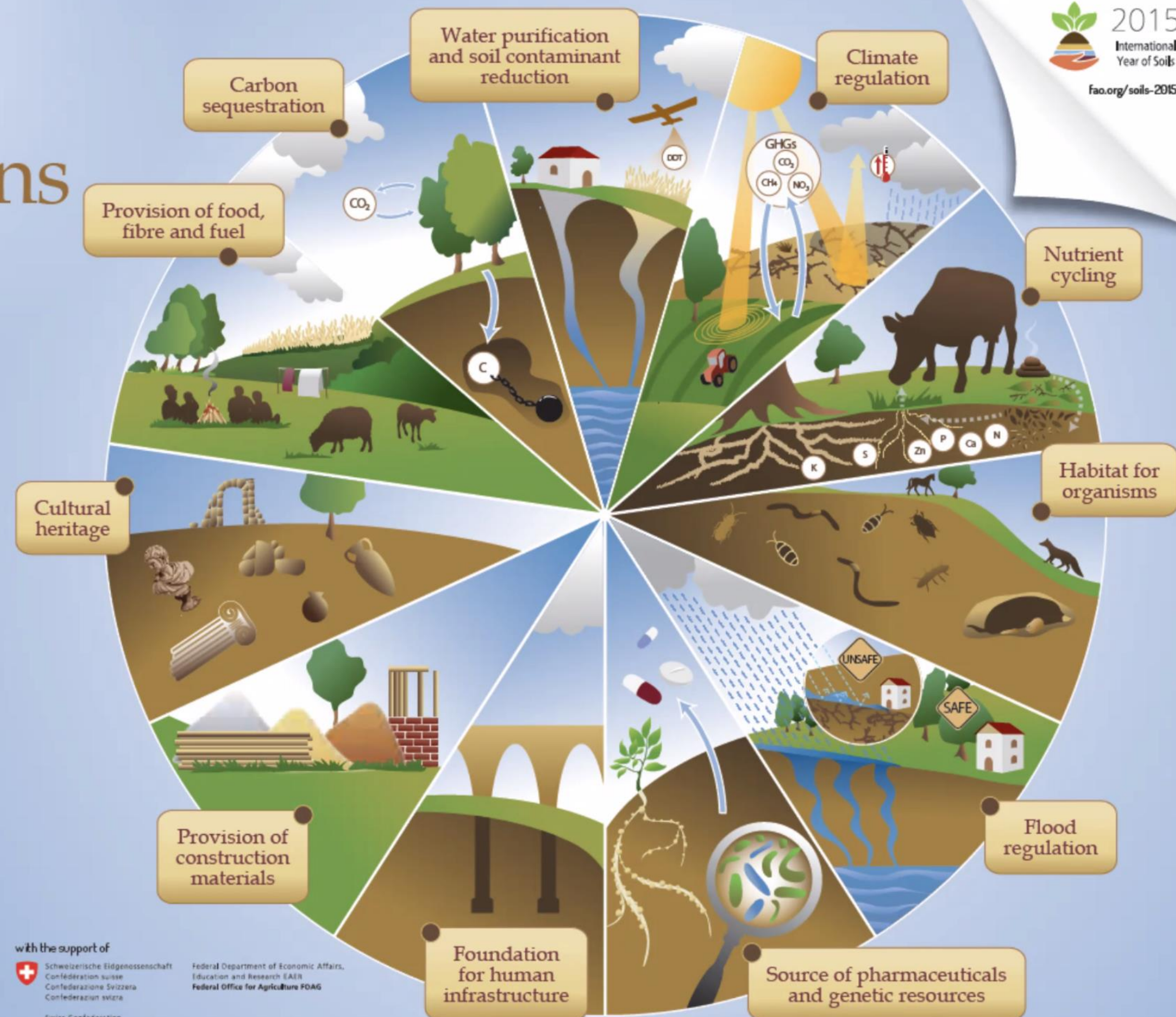
Soils deliver ecosystem services that enable life on Earth



2015

International
Year of Soils

fao.org/soils-2015



Food and Agriculture
Organization of the
United Nations



with the support of
Schweizerische Eidgenossenschaft
Confédération suisse
Confederazione Svizzera
Confederaziun svizra
Swiss Confederation

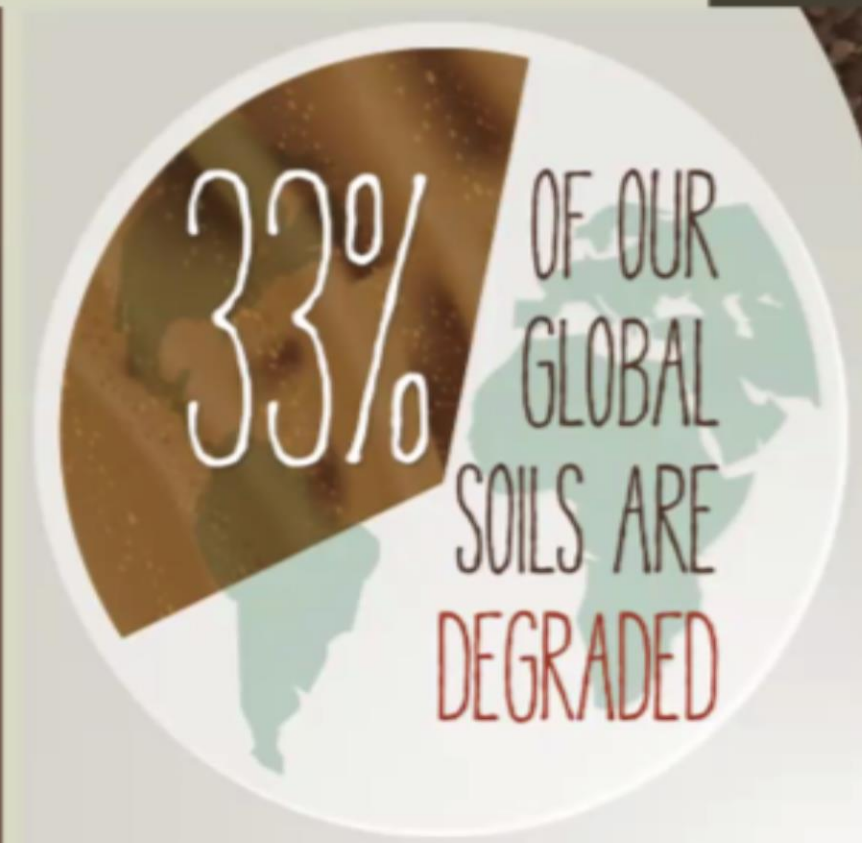
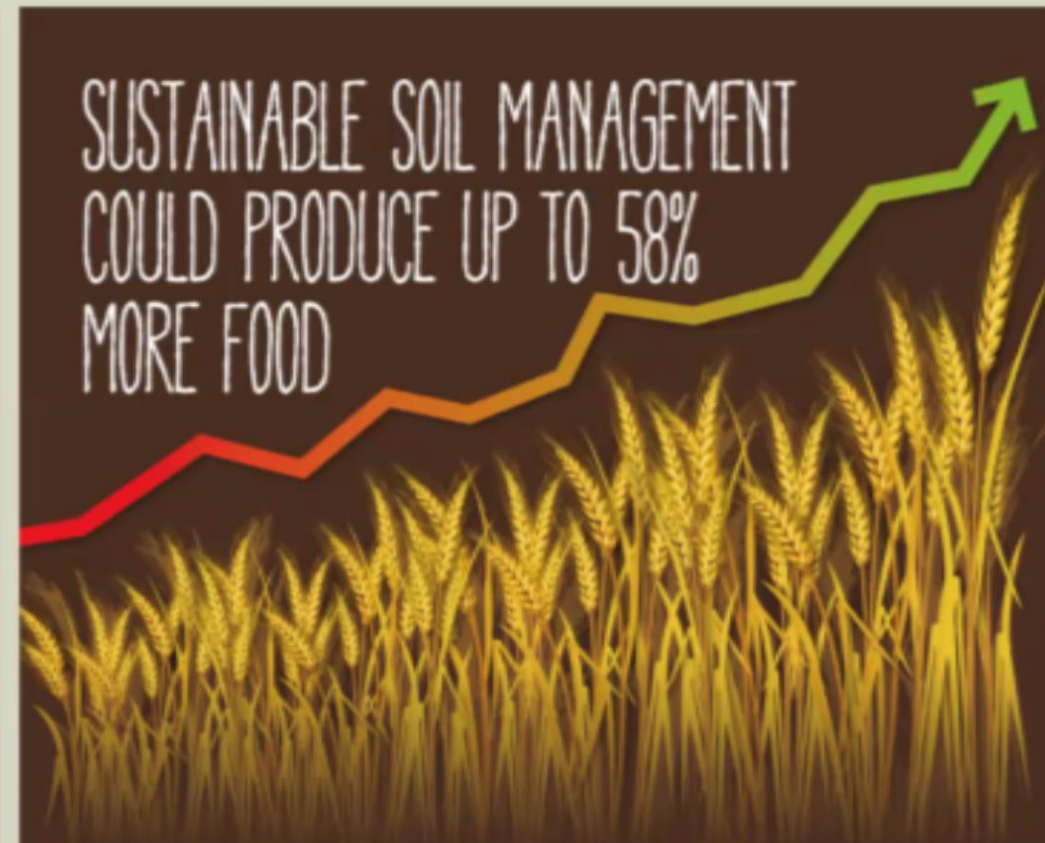
Federal Department of Economic Affairs,
Education and Research EAER
Federal Office for Agriculture FOAG



Healthy soil is
key to feeding

9 billion  by **2050**

Talking: tindall



Soil is fundamental to crop production. It constitutes the natural resource that provides mankind most of its food and resources.

Earth as an Apple



Academic Standard Alignment



Phenomena! Driving Questions?



Seed Babies



Are seeds dead or alive?

Soak lima beans for 24 hours.



Dissection: Seed coat

Seed coat

Baby leaves +
seed half

Seed half



Baby leaves!

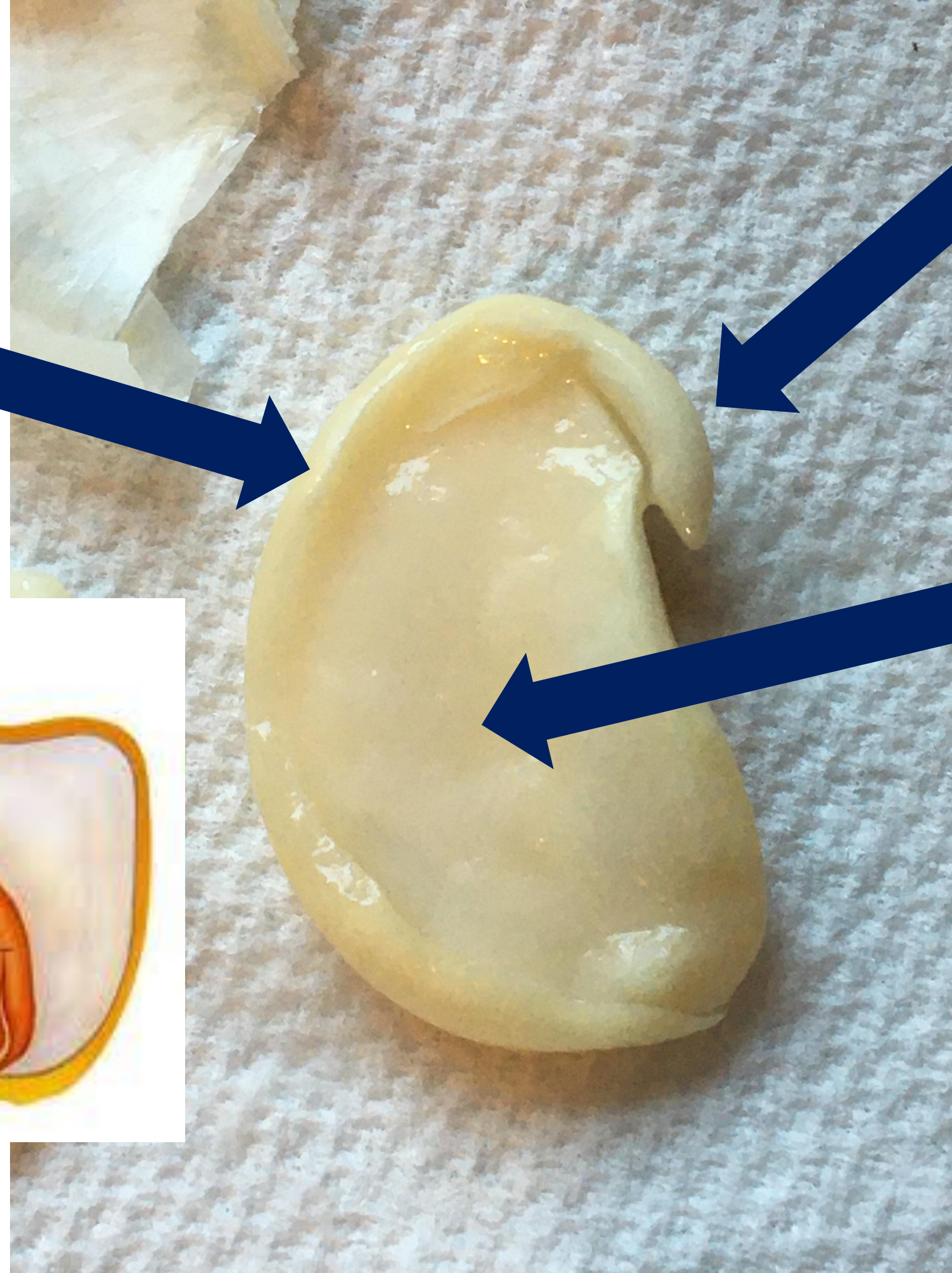
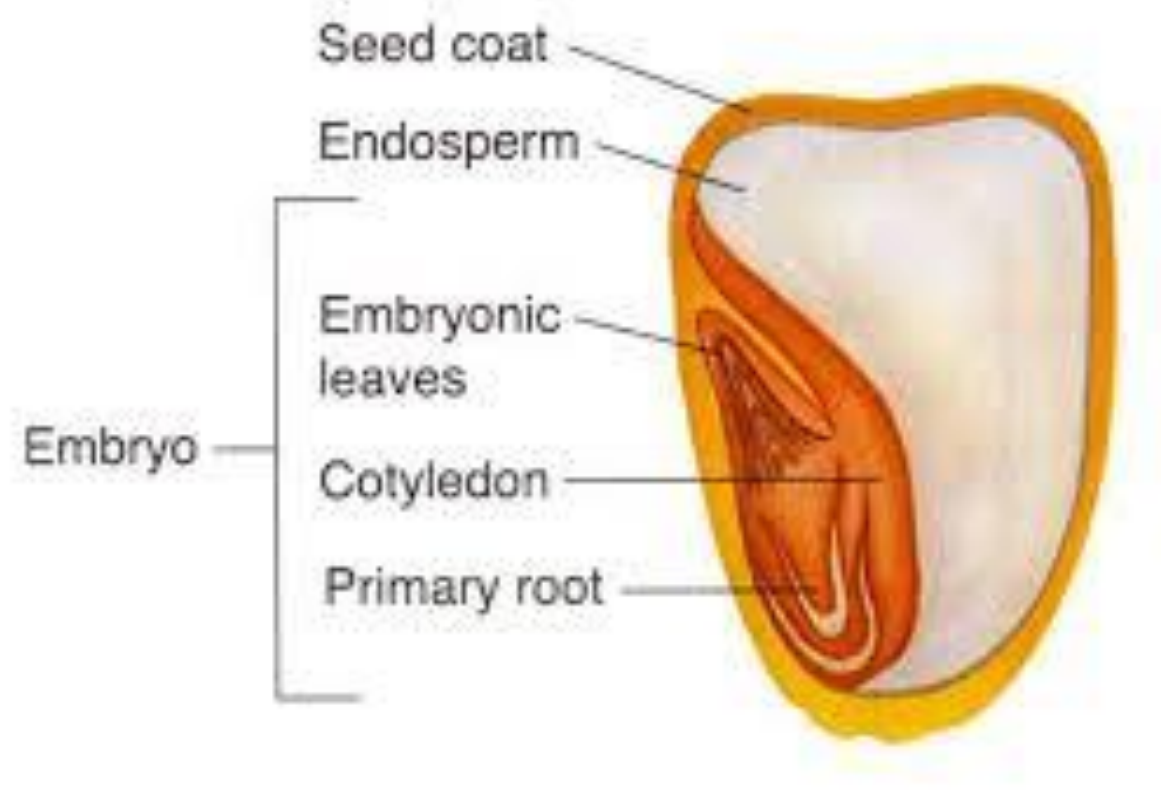


Embryo

Radicle
(root)

Epicotyl
(leaves)

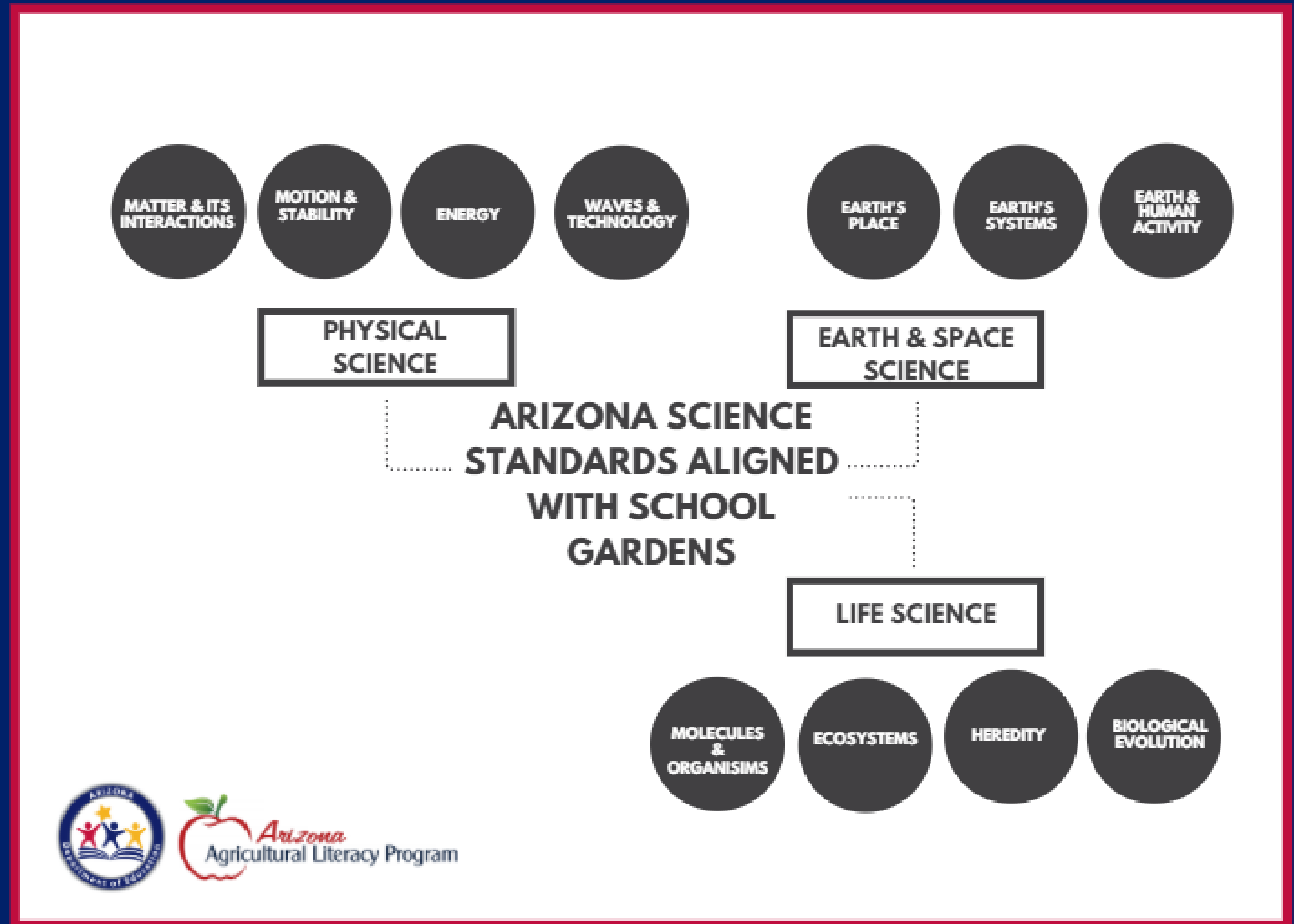
Cotyledon
(food storage)





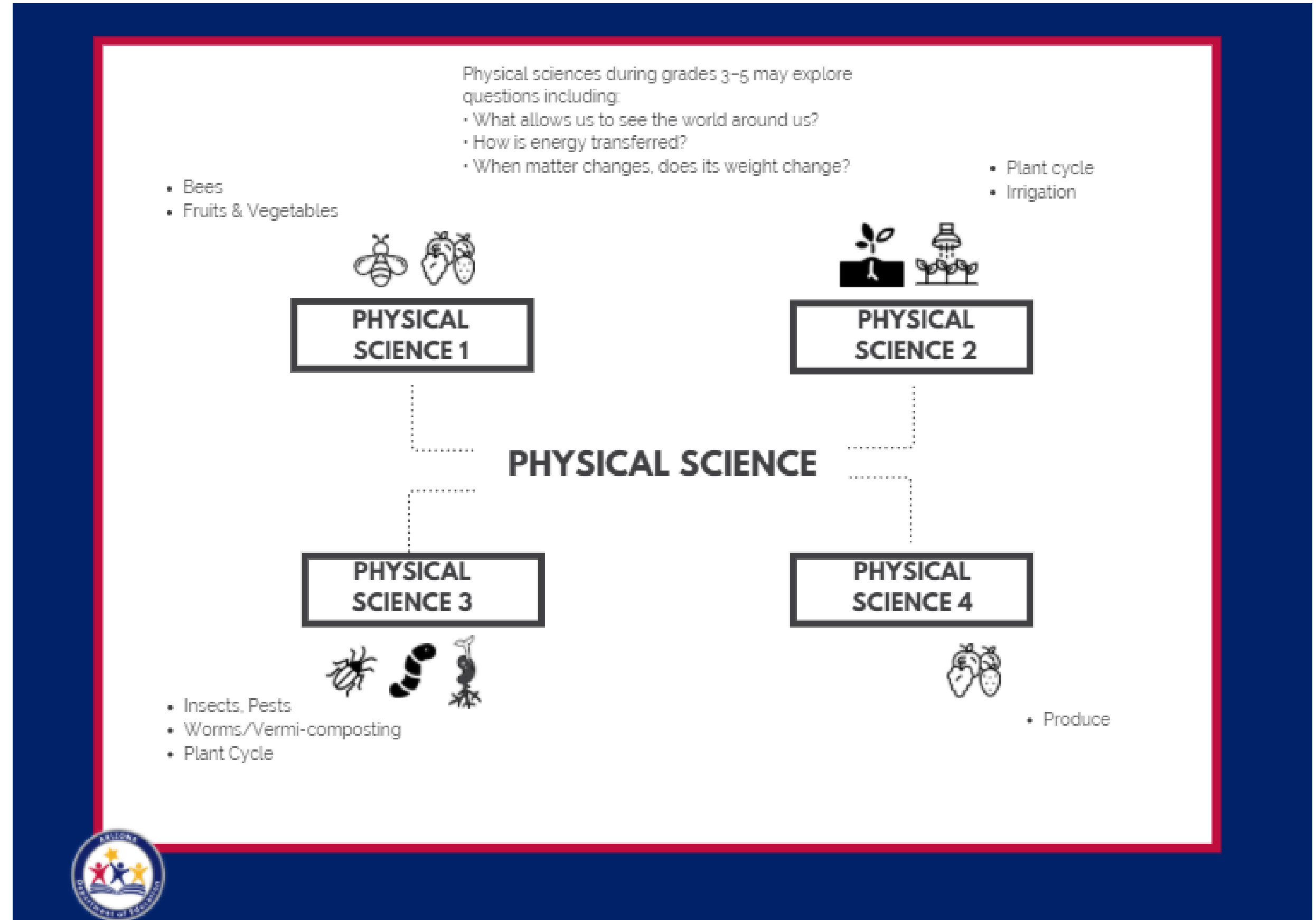
School Garden Matrix (draft)

- ✓ Science standards that fit
- ✓ Cross Cutting Concepts
- ✓ Science & Engineering Practices



Agriculture Education Connections (draft)

- ✓ Bees
- ✓ Worm/Vermicomposting
- ✓ Irrigation
- ✓ Fruits & Vegetables
- ✓ Soil
- ✓ Plant Cycle
- ✓ Insects/Pests



Cross Cutting Connections

(draft)

- ✓ Patterns
- ✓ Cause & Effect
- ✓ Scale
- ✓ Proportion & Quantity
- ✓ Systems/ System Models
- ✓ Stability & Change
- ✓ Structure & Function
- ✓ Energy & Matter



CROSS CUTTING CONCEPTS

Mixed grade groups

PATTERNS	CAUSE & EFFECT	SCALE	PROPORTION & QUANTITY
<ul style="list-style-type: none"> • Seasons • weather • daylight cycles • insect and plant life cycles • moon cycles 	<ul style="list-style-type: none"> • Watering & Temperature • Pest management & plant health • Weather (morning dew, snow melting, humidity) 	<ul style="list-style-type: none"> • Square foot gardening • Plant varieties • Container gardening 	<ul style="list-style-type: none"> • Amendments and fertilizers • Succession planting •
SYSTEMS/ SYSTEM MODELS	STABILITY & CHANGE	STRUCTURE & FUNCTION	ENERGY & MATTER
<ul style="list-style-type: none"> • Living & Non-living Things • Soil structures • Climate • Irrigation (turgor pressure) • glucose & oxygen • carbon dioxide and water • photosynthesis 	<ul style="list-style-type: none"> • Vertical gardening like hydroponic or aquaponic gardening • Climate & weather changes season to season • Forest management 	<ul style="list-style-type: none"> • Key parts of the plant • Trellis, shade structure, freeze cloth or hoop house • top soil, mulch, cover crops • Animals, insects and plants 	<ul style="list-style-type: none"> • Soil health • Water and root systems

Science & Engineering Practices (draft)

- ✓ Asking Questions & Defining Problems
- ✓ Developing & Using Models
- ✓ Planning & Carrying Out Investigations
- ✓ Analyze & Interpret Data
- ✓ Using Math and Conceptual Thinking
- ✓ Constructing Explanations & Designing Solutions
- ✓ Engaging in an argument from Evidence
- ✓ Obtaining, Evaluating & Communicating Information.

SCIENCE & ENGINEERING PRACTICES

Mixed grade groups

ASKING QUESTIONS & DEFINING PROBLEMS

- Why did a plant die?
- What is a "volunteer" plant and how did it get there?
- What is chewing on this plant?

DEVELOPING & USING MODELS

- Various garden models (raised bed, vertical, companion planting etc)
- Food safety practices
- Watering schedules

PLANNING & CARRYING OUT INVESTIGATIONS

- Seasonal planting
- Companion planting (pest mitigation)
- Identifying plant and insect types

ANALYZE & INTERPRET DATA

- Gardening record keeping
- Harvest records
- Water-use records
- Garden work day records or guest log

USING MATH & CONCEPTUAL THINKING

- Counting & seed sorting
- Planting (days from frost and to harvest) & spacial awareness
- Seed saving/collecting

CONSTRUCTING EXPLANATIONS & DESIGNING SOLUTIONS

- Garden design/ location (sunlight and water flow)
- Rainwater harvesting
- Companion planting or crop rotations

ENGAGING IN AN ARGUMENT FROM EVIDENCE

- Plant selection & justification

OBTAINING, EVALUATING & COMMUNICATING INFORMATION

- Create a garden showcase
- Scavenger hunt

Interdisciplinary Lesson

Talking:



Math

- Ratios
- Fractions
- Measurements
- Serving sizes
- Data collection & analysis
- Calculate costs



Agriculture



- Where do the ingredients come from?
- When & where are they grown?
- How are they grown?

Art



- Create advertisements
- Create packaging

Reading/ Writing

- Lab notebook
- Write recipe
- Write observations from tastings
- Create a marketing plan
- Write a review of a recipe
- Read other recipes

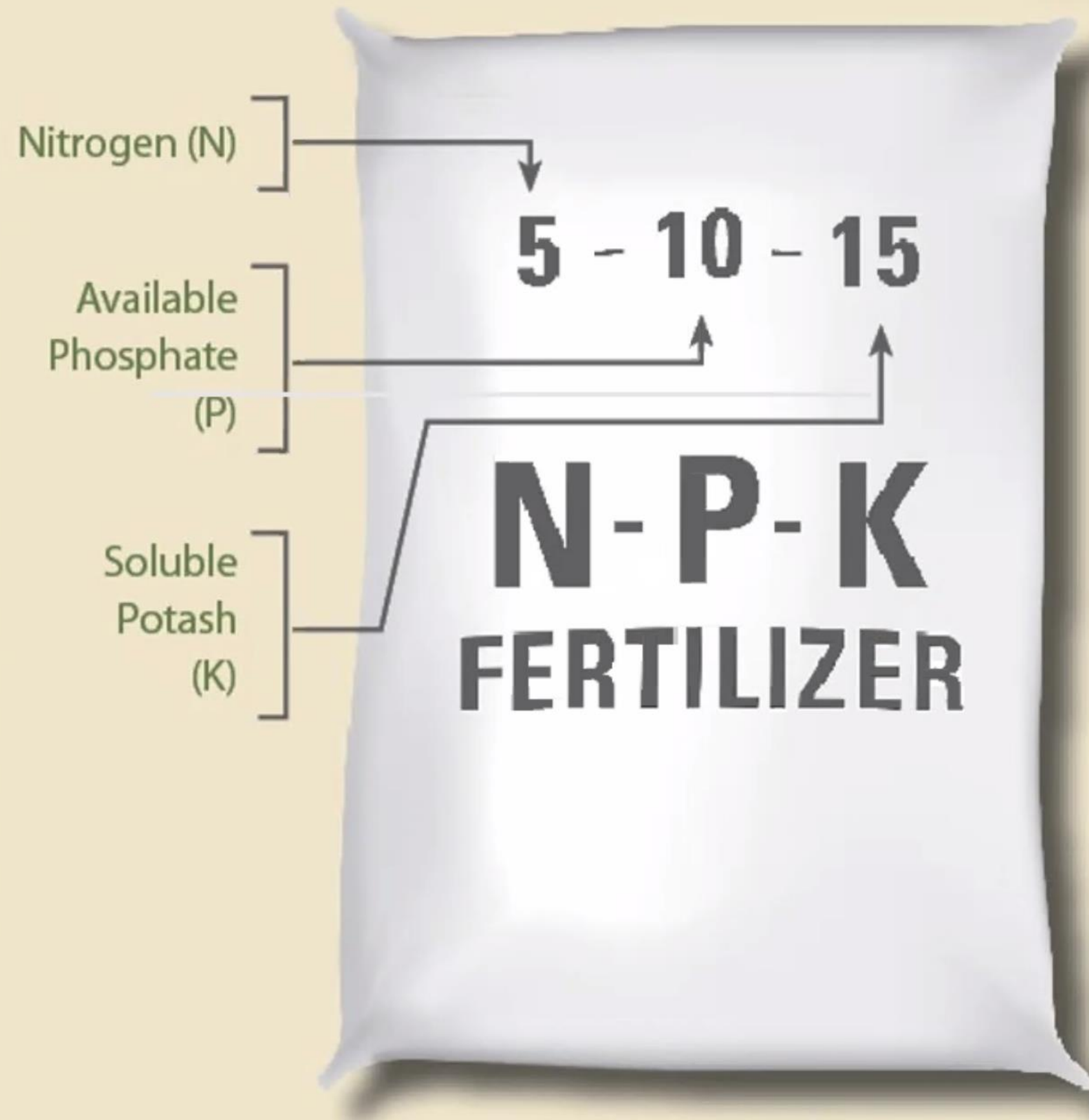
Nutrient Analysis

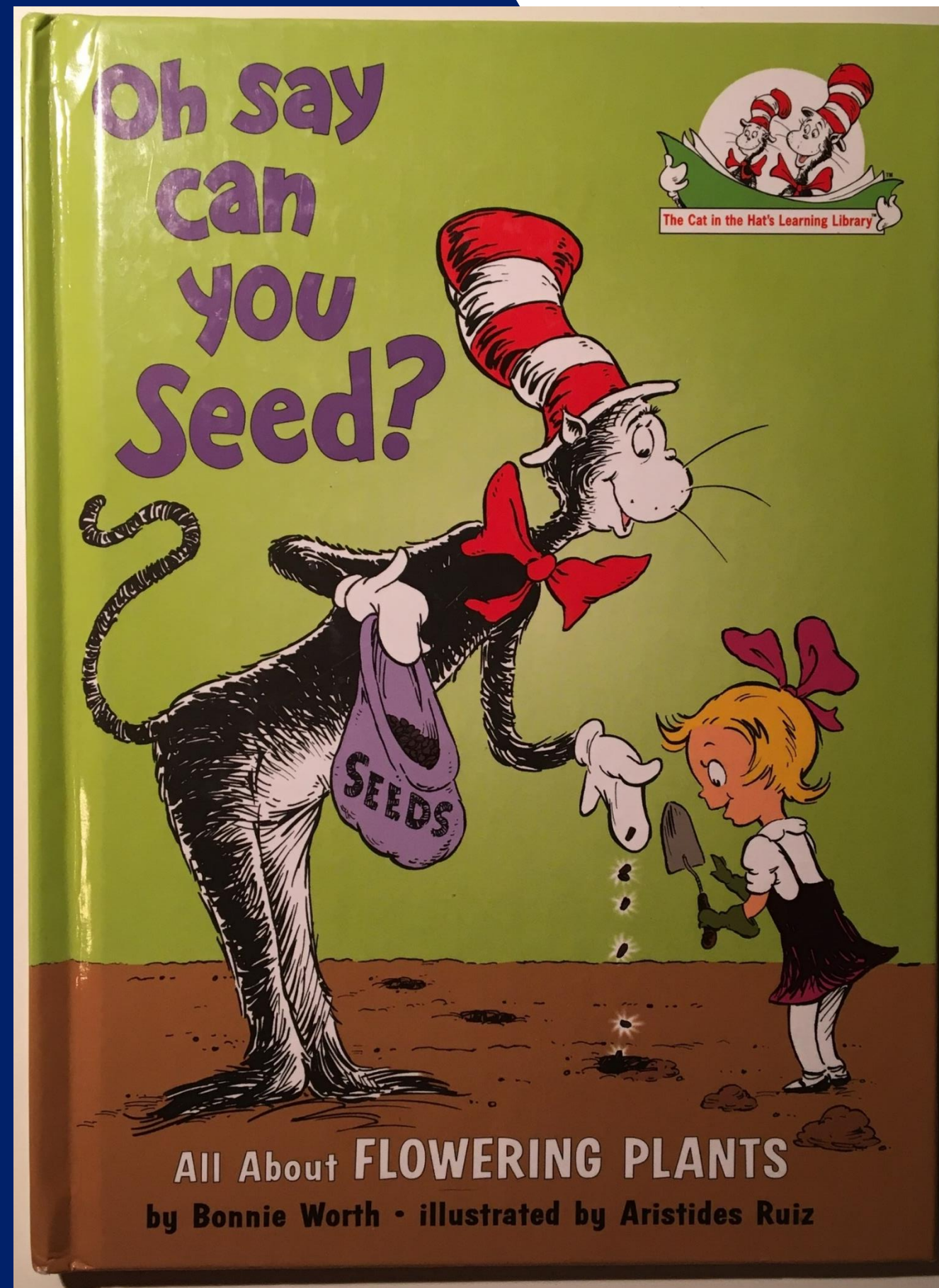
40-pound bag

N – 2 lb

P – 4 lb.

K – 6 lb.





Oh say can you seed?

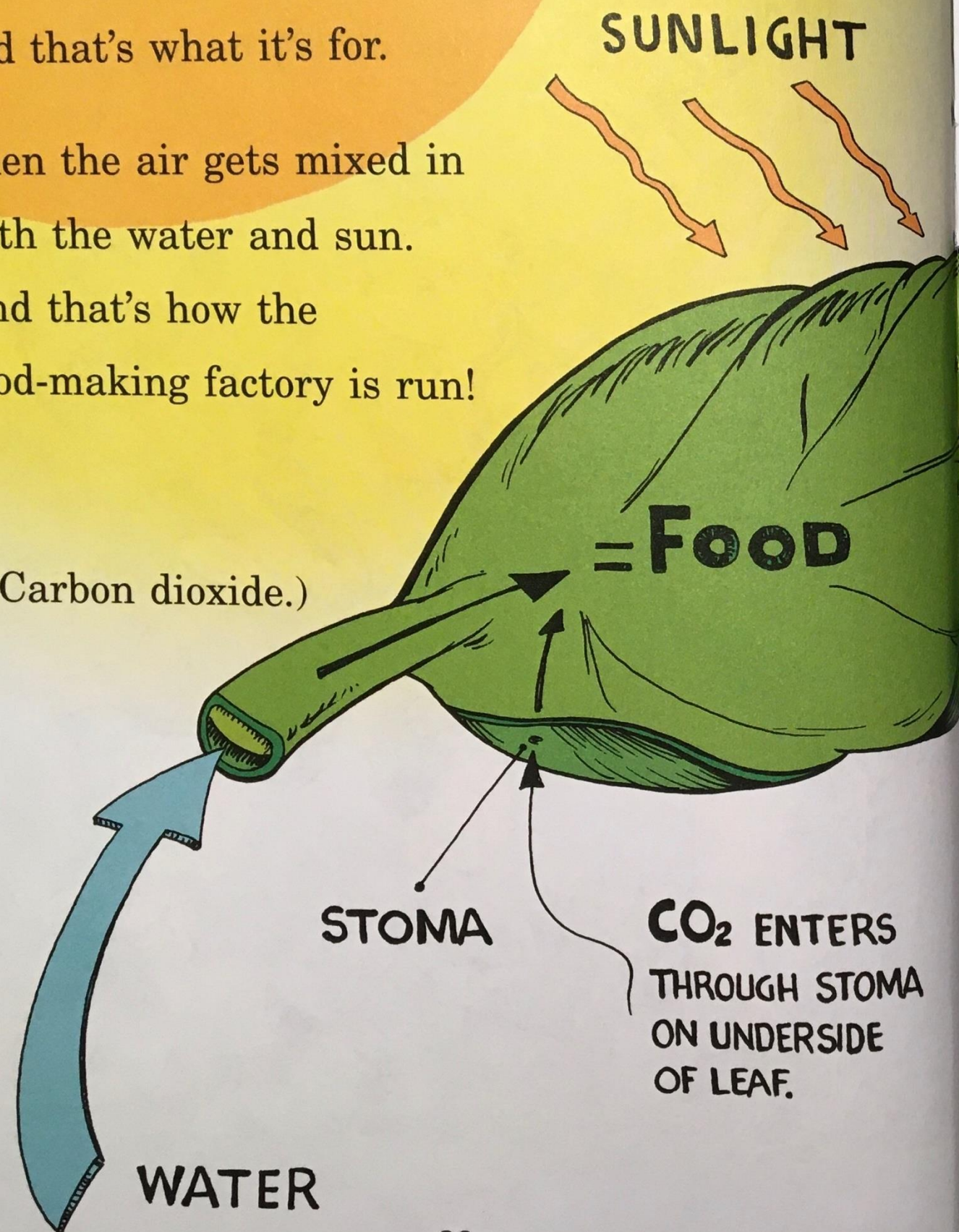
By Bonnie Worth

- ✓ Great for many grades
- ✓ Simplifies a complex subject
- ✓ Makes learning fun!

The leaf takes in CO_2^*
through a stoma, or pore.
It works like a mouth,
and that's what it's for.

Then the air gets mixed in
with the water and sun.
And that's how the
food-making factory is run!

(*Carbon dioxide.)



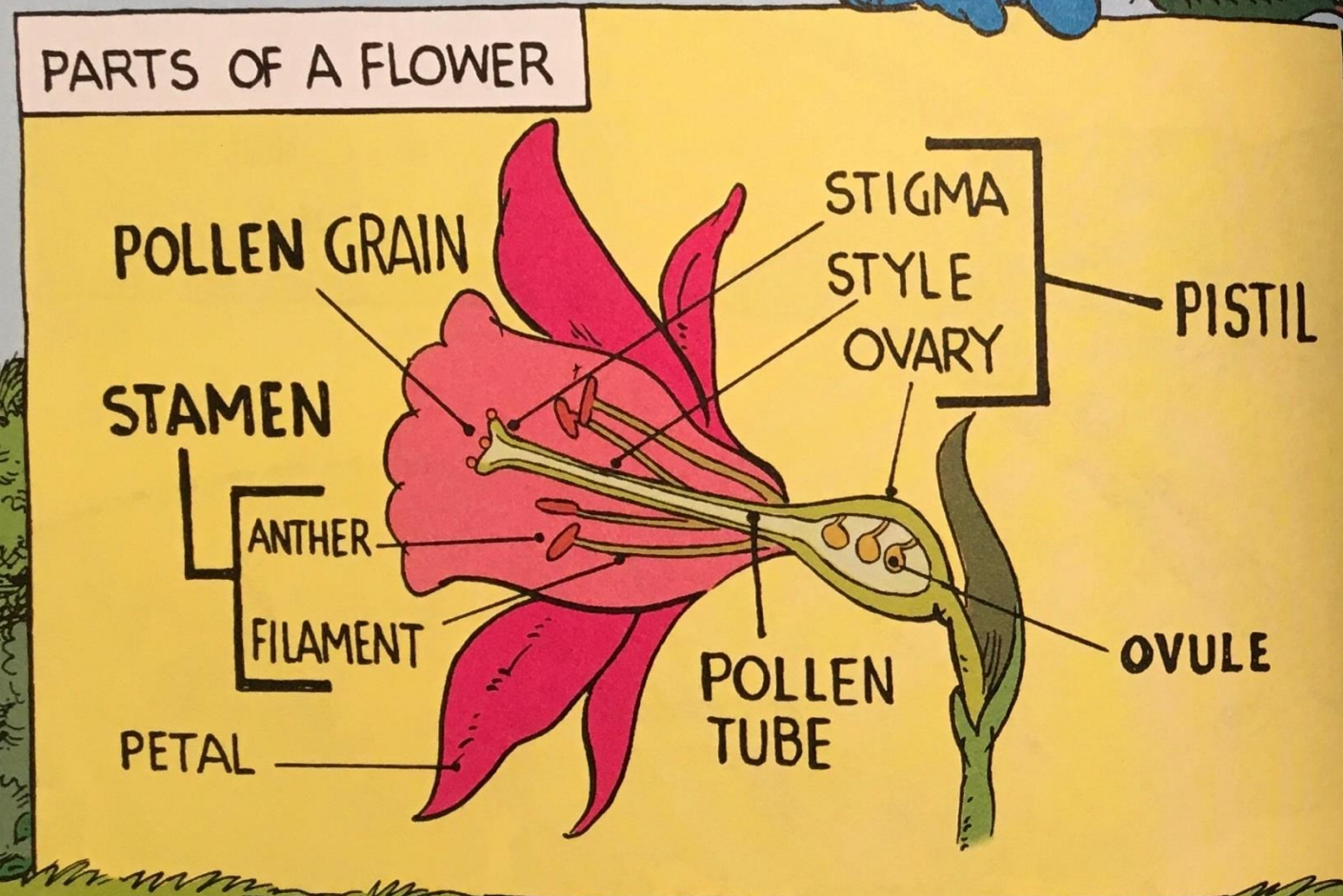
I see by my clock
that now is the hour
to drop in and say a
hello to the flower!

OXYGEN

Plants breathe out a gas
that we breathe in.
The name of that gas
is OX-Y-GEN!



Thing Two has a chart—
he will share it with you—
that shows what the parts
of a flower all do.

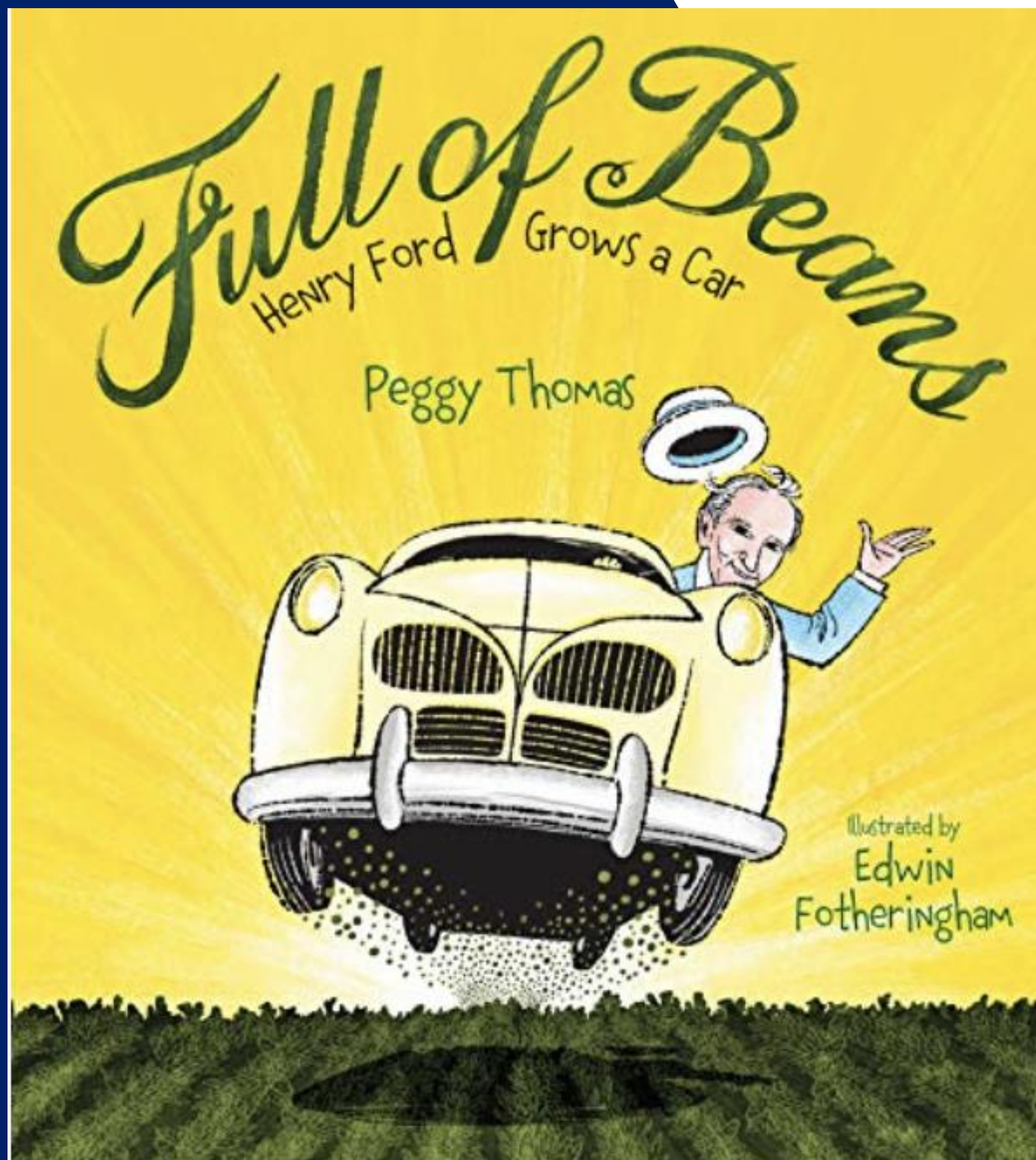


In the pistil are ovules—
they're unfertilized seeds.
The stamen holds pollen,
which an ovule needs.

An unfertilized ovule
will not ever grow,
and pollen's the stuff
that will fix that, you know.



(A flower's own pollen
or another's okay.)
That's where the bees
play a role, by the way.



Full of Beans:

Henry Ford Grows a Car

By: Peggy Thomas



American Farm Bureau ✓ @FarmBureau · Feb 7

Meet Peggy Thomas, author of the @AgFoundation's book of the year, "Full of Beans: Henry Ford Grows a Car." This book describes Henry Ford's drive to incorporate soybeans into every part of his life. bit.ly/372xG6x?



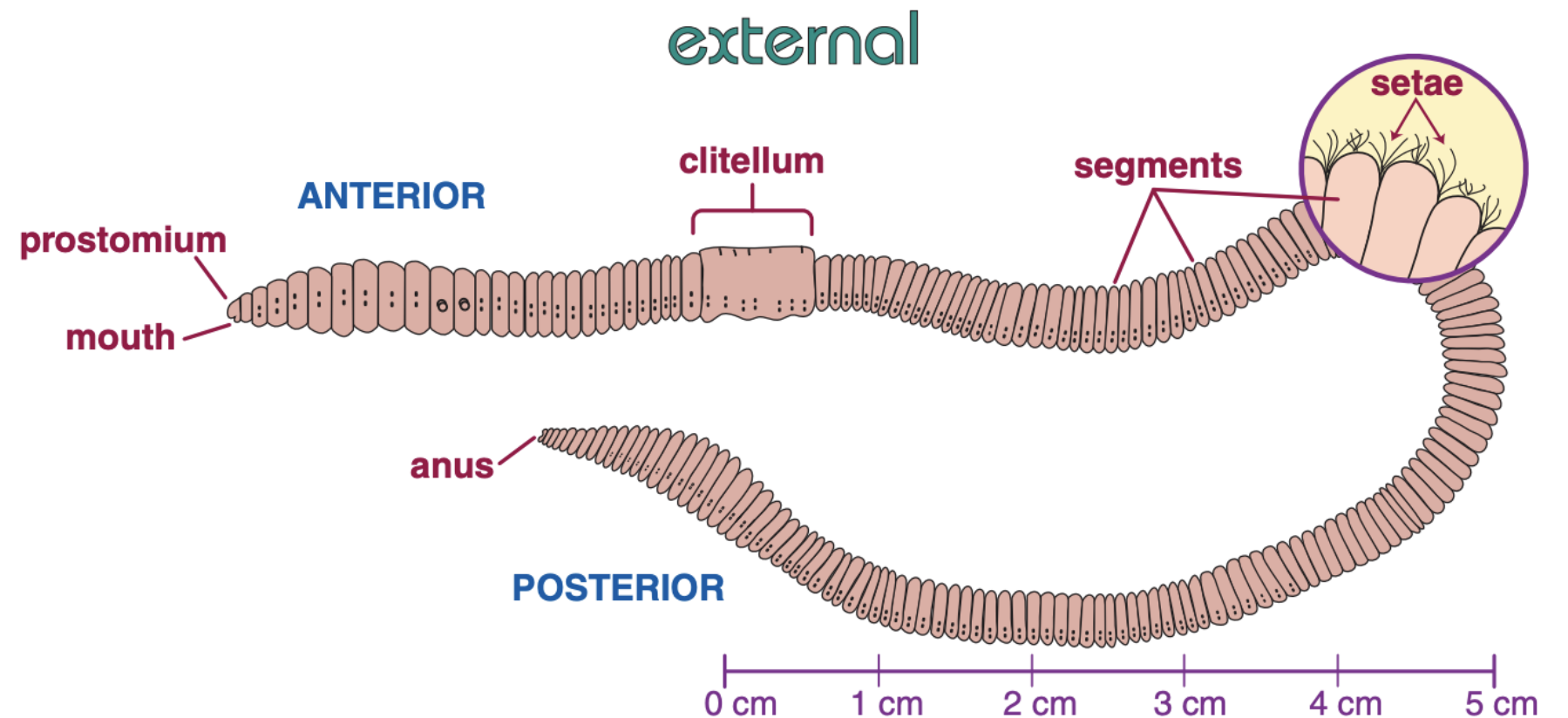
Vermicomposting



Arizona Partners:



Earthworm Anatomy



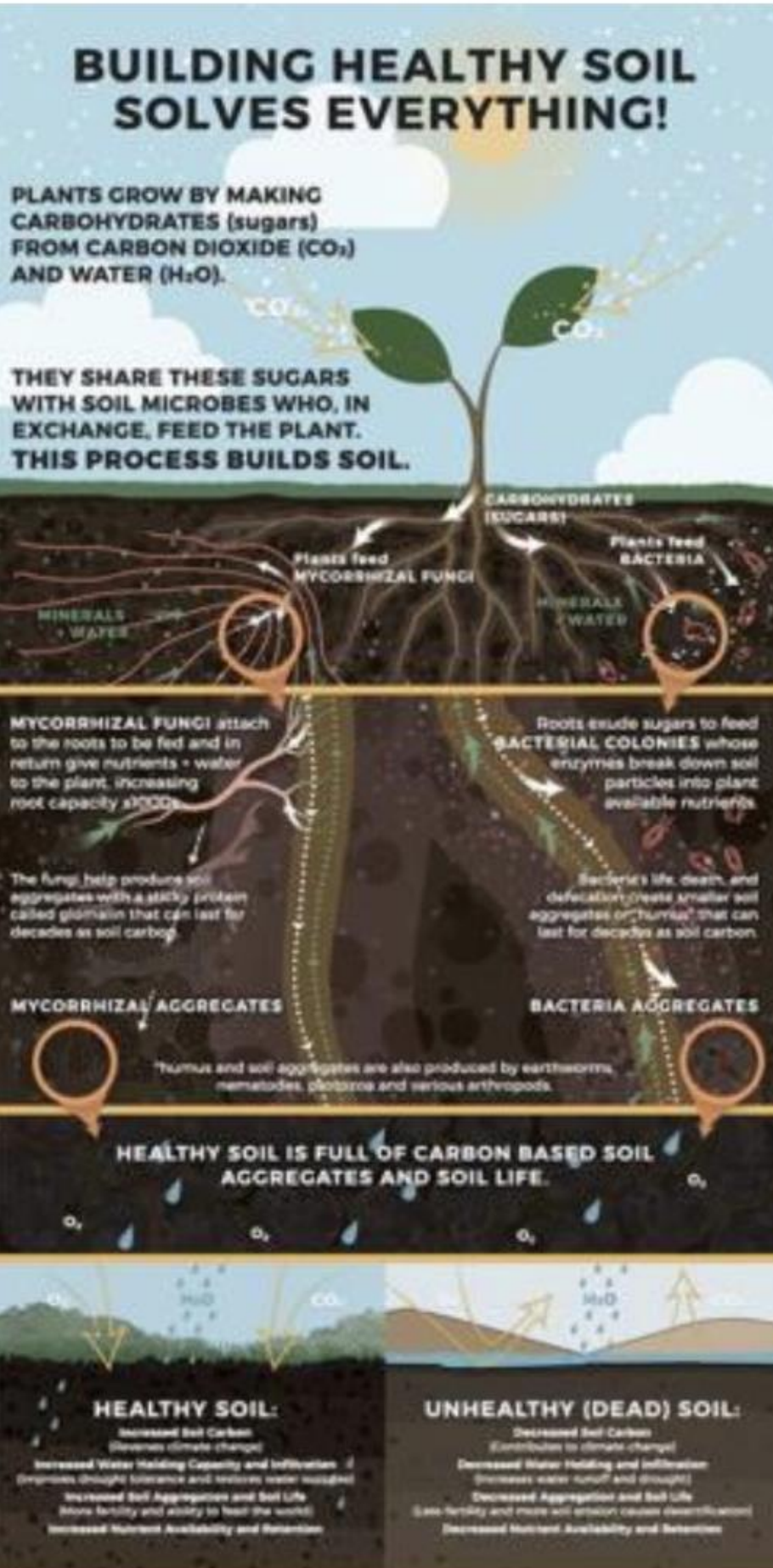
- Earthworms are **invertebrates** — they do not have backbones.
- Like humans, earthworms have **bilateral symmetry**.
- The **prostomium**, a flap that covers the mouth in some species, is a sensory device.
- Earthworms do not have lungs — they can breathe through their skin as long as it stays moist.
- Because earthworms do not have teeth, they use a **gizzard** to grind up large pieces of food.



What's all the fuss about microbes?



- ✓ Microbes make compost, improve soil
"Spoon-feed" plants!
- ✓ Microbes are "mini-composters" = nutrients for plants (think: earthworms)
- ✓ During hot composting, microbes create heat to destroy pathogens and degrade contaminants
- ✓ Stimulate humus development (*Hue-Muss*) = Dark organic matter
This is what "good soil" feels like!
- ✓ Microbes' work enhances soil structure for plant health



Key Takeaway:
Healthy, live, diverse soil microbes are key to a successful garden.

NUTRIENTS FOR LIFE

NUTRIENTS FOR LIFE
FOUNDATION

Humans and plants need many of the same nutrients to grow big and strong. Humans need a variety of proteins, carbohydrates, minerals, and vitamins to stay healthy. Besides the primary nutrients NPK, plants need small amounts of secondary nutrients, such as calcium and sulfur, and micronutrients, like iron and zinc.

107	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100	101	102	103	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118	119	120	121	122	123	124	125	126	127	128	129	130	131	132	133	134	135	136	137	138	139	140	141	142	143	144	145	146	147	148	149	150	151	152	153	154	155	156	157	158	159	160	161	162	163	164	165	166	167	168	169	170	171	172	173	174	175	176	177	178	179	180	181	182	183	184	185	186	187	188	189	190	191	192	193	194	195	196	197	198	199	200	201	202	203	204	205	206	207	208	209	210	211	212	213	214	215	216	217	218	219	220	221	222	223	224	225	226	227	228	229	230	231	232	233	234	235	236	237	238	239	240	241	242	243	244	245	246	247	248	249	250	251	252	253	254	255	256	257	258	259	260	261	262	263	264	265	266	267	268	269	270	271	272	273	274	275	276	277	278	279	280	281	282	283	284	285	286	287	288	289	290	291	292	293	294	295	296	297	298	299	300	301	302	303	304	305	306	307	308	309	310	311	312	313	314	315	316	317	318	319	320	321	322	323	324	325	326	327	328	329	330	331	332	333	334	335	336	337	338	339	340	341	342	343	344	345	346	347	348	349	350	351	352	353	354	355	356	357	358	359	360	361	362	363	364	365	366	367	368	369	370	371	372	373	374	375	376	377	378	379	380	381	382	383	384	385	386	387	388	389	390	391	392	393	394	395	396	397	398	399	400	401	402	403	404	405	406	407	408	409	410	411	412	413	414	415	416	417	418	419	420	421	422	423	424	425	426	427	428	429	430	431	432	433	434	435	436	437	438	439	440	441	442	443	444	445	446	447	448	449	450	451	452	453	454	455	456	457	458	459	460	461	462	463	464	465	466	467	468	469	470	471	472	473	474	475	476	477	478	479	480	481	482	483	484	485	486	487	488	489	490	491	492	493	494	495	496	497	498	499	500	501	502	503	504	505	506	507	508	509	510	511	512	513	514	515	516	517	518	519	520	521	522	523	524	525	526	527	528	529	530	531	532	533	534	535	536	537	538	539	540	541	542	543	544	545	546	547	548	549	550	551	552	553	554	555	556	557	558	559	560	561	562	563	564	565	566	567	568	569	570	571	572	573	574	575	576	577	578	579	580	581	582	583	584	585	586	587	588	589	590	591	592	593	594	595	596	597	598	599	600	601	602	603	604	605	606	607	608	609	610	611	612	613	614	615	616	617	618	619	620	621	622	623	624	625	626	627	628	629	630	631	632	633	634	635	636	637	638	639	640	641	642	643	644	645	646	647	648	649	650	651	652	653	654	655	656	657	658	659	660	661	662	663	664	665	666	667	668	669	670	671	672	673	674	675	676	677	678	679	680	681	682	683	684	685	686	687	688	689	690	691	692	693	694	695	696	697	698	699	700	701	702	703	704	705	706	707	708	709	710	711	712	713	714	715	716	717	718	719	720	721	722	723	724	725	726	727	728	729	730	731	732	733	734	735	736	737	738	739	740	741	742	743	744	745	746	747	748	749	750	751	752	753	754	755	756	757	758	759	760	761	762	763	764	765	766	767	768	769	770	771	772	773	774	775	776	777	778	779	780	781	782	783	784	785	786	787	788	789	790	791	792	793	794	795	796	797	798	799	800	801	802	803	804	805	806	807	808	809	810	811	812	813	814	815	816	817	818	819	820	821	822	823	824	825	826	827	828	829	830	831	832	833	834	835	836	837	838	839	840	841	842	843	844	845	846	847	848	849	850	851	852	853	854	855	856	857	858	859	860	861	862	863	864	865	866	867	868	869	870	871	872	873	874	875	876	877	878	879	880	881	882	883	884	885	886	887	888	889	890	891	892	893	894	895	896	897	898	899	900	901	902	903	904	905	906	907	908	909	910	911	912	913	914	915	916	917	918	919	920	921	922	923	924	925	926	927	928	929	930	931	932	933	934	935	936	937	938	939	940	941	942	943	944	945	946	947	948	949	950	951	952	953	954	955	956	957	958	959	960	961	962	963	964	965	966	967	968	969	970	971	972	973	974	975	976	977	978	979	980	981	982	983	984	985	986	987	988	989	990	991	992	993	994	995	996	997	998	999	1000	1001	1002	1003	1004	1005	1006	1007	1008	1009	1010	1011	1012	1013	1014	1015	1016	1017	1018	1019	1020	1021	1022	1023	1024	1025	1026	1027	1028	1029	1030	1031	1032	1033	1034	1035	1036	1037	1038	1039	1040	1041	1042	1043	1044	1045	1046	1047	1048	1049	1050	1051	1052	1053	1054	1055	1056	1057	1058	1059	1060	1061	1062	1063	1064	1065	1066	1067	1068	1069	1070	1071	1072	1073	1074	1075	1076	1077	1078	1079	1080	1081	1082	1083	1084	1085	1086	1087	1088	1089	1090	1091	1092	1093	1094	1095	1096	1097	1098	1099	1100	1101	1102	1103	1104	1105	1106	1107	1108	1109	1110	1111	1112	1113	1114	1115	1116	1117	1118	1119	1120	1121	1122	1123	1124	1125	1126	1127	1128	1129	1130	1131	1132	1133	1134	1135	1136	1137	1138	1139	1140	1141	1142	1143	1144	1145	1146	1147	1148	1149	1150	1151	1152	1153	1154	1155	1156	1157	1158	1159	1160	1161	1162	1163	1164	1165	1166	1167	1168	1169	1170	1171	1172	1173	1174	1175	1176	1177	1178	1179	1180	1181	1182	1183	1184	1185	1186	1187	1188	1189	1190	1191	1192	1193	1194	1195	1196	1197	1198	1199	1200	1201	1202	1203	1204	1205	1206	1207	1208	1209	1210	1211	1212	1213	1214	1215	1216	1217	1218	1219	1220	1221	1222	122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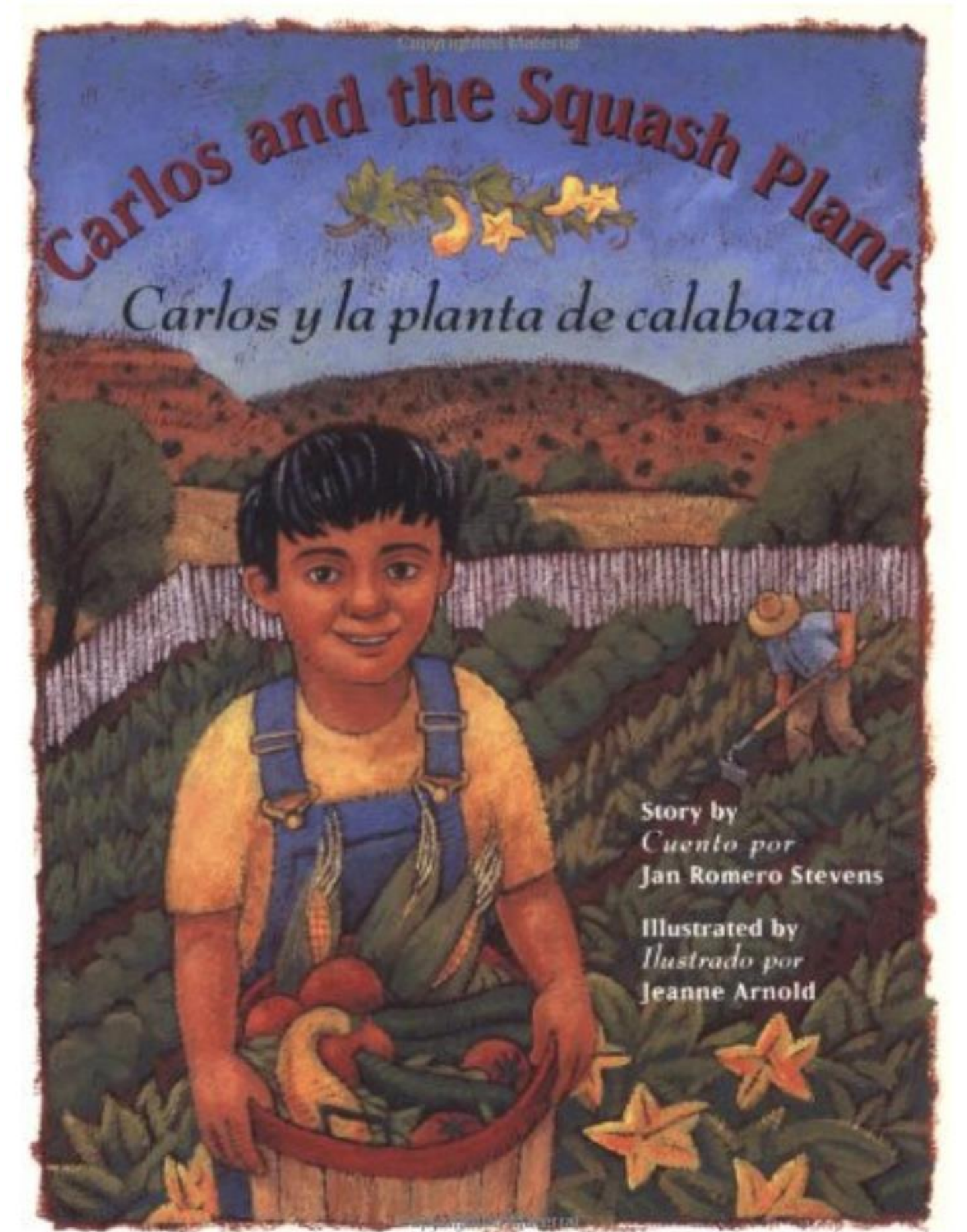
Calabacitas Recipe

Ingredients: *Onions, Green chiles, Zucchini, Yellow squash, Corn, Tomato, Cheese*



Curriculum Connections:

- Reading & following recipe instructions (language arts)
- Measuring (math)
- Cooking (science)
- Cultural connections (history/social studies)



Recipe included in the resource.

Start Small and Simple

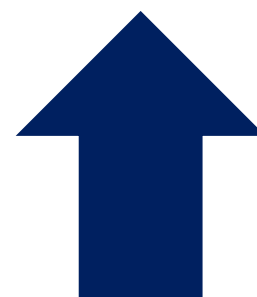
First steps...



1) Grow herbs



Gigette's Dill



2) Sell them



3) Practice recipes with students



Citrus Fruit Salad

Citrus Fruit Salad is a delicious medley of juicy, tart winter fruits. Garnished with fresh mint and sweet blueberries.

Prep Time	Total Time
10 mins	10 mins

Course: Appetizer, Breakfast, Salad, Side Dish, Snack
Cuisine: American Servings: 5 Calories: 110kcal
Author: Lauren Allen



★★★★★
5 from 2 votes

Ingredients

- 1 red grapefruit , peeled and sliced into rings
- 1 pomelo , peeled and sliced into rings
- 1 tangerines , peeled and sliced into rings
- 1 orange , peeled and sliced into rings
- 2 clementines , peeled and sliced into rings
- 1/2 cup fresh blueberries
- fresh mint leaves , chopped (for garnish)

Instructions

1. Layer fresh fruit rings and blueberries onto a plate or in a shallow bowl. Sprinkle with fresh chopped mint.

Nutrition

Calories: 110kcal | Carbohydrates: 28g | Protein: 2g | Sodium: 2mg | Potassium: 469mg | Fiber: 3g | Sugar: 11g | Vitamin A: 745IU | Vitamin C: 124.2mg | Calcium: 42mg | Iron: 0.3mg

200 MG

\$2.19

Heirloom

TOMATO

CHEROKEE PURPLE



SINCE 1856

FERRY~MORSE®
SEEDS GUARANTEED TO GROW

700 MG

VEGETABLE

\$1.99

SINCE 1856

FERRY~MORSE®

PEPPER

Hungarian Yellow Wax

Pimiento

Cera amarilla húngara



DAYS TO
58 - 85
HARVEST

250 MG

Organic

\$2.49

SINCE 1856

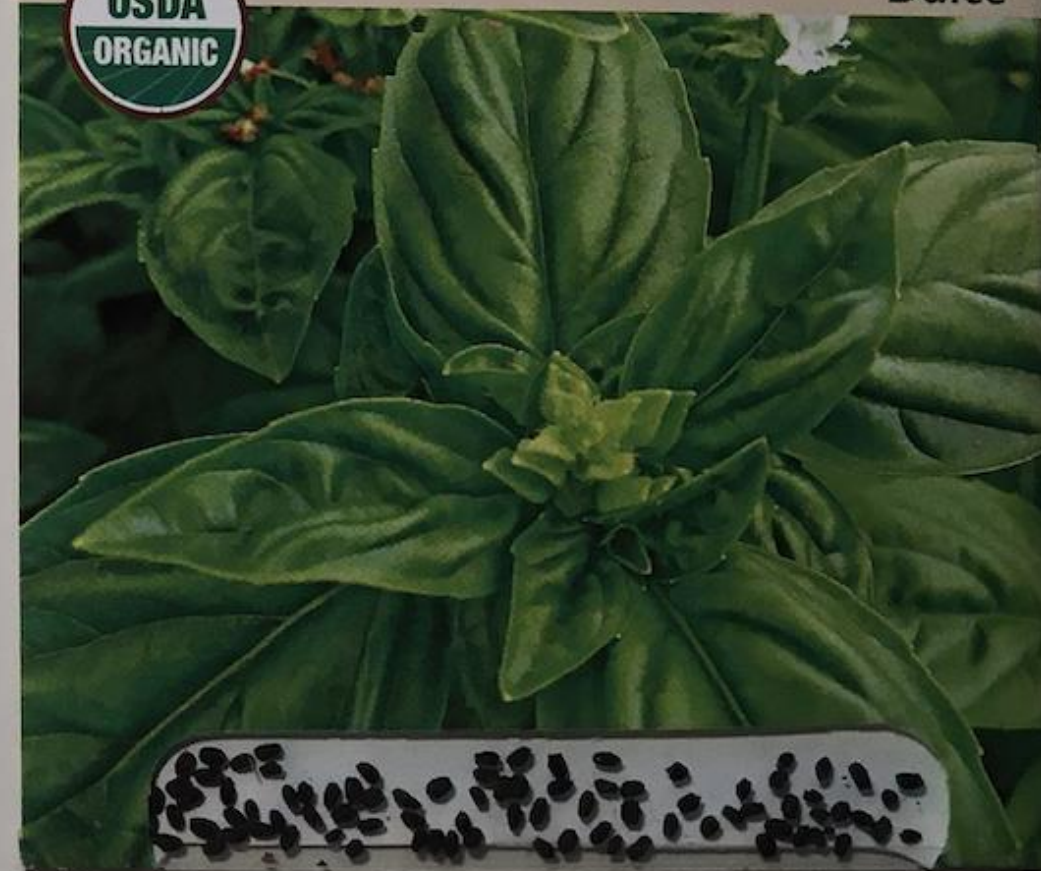
FERRY~MORSE®

BASIL

Sweet

ALBAHACA

Dulce



TOMATO Cherokee Purple

Online
Code
9163

"Cherokee Purple" will be a surefire conversation starter with fellow gardeners. Originally grow by Cherokee Indians, it has a smoky, sweet flavor enjoyed for over 100 years. The indeterminate vines bear 10-12 oz. tomatoes with pink-purple flesh. Disease tolerant.

Planting Instructions:

Start seed indoors in a sunny location 6 weeks prior to warm weather. Transplant outdoors in full sun when seedlings display 4 - 6 leaves and weather is warm. Seed can be sown directly into garden when soil is warm. Tomatoes cannot tolerate frost.

Suggestions:

To keep fruit clean and easier to pick, support with stakes or cages. Tomatoes require at least an inch of water per week.

Days to Germination	Planting Depth	Days to Harvest	Spacing Row / Plant
7-10	1/4"	82	2 1/2' / 2'



May - June
April - June
March - May
March - May

Plantation Products LLC.,
202 S. Washington St.
Norton, MA 02766
ferrymorse.com



PACKED FOR 19 SELL BY 12/19 R1

A medium-hot pepper. Plants bear medium to thick-walled, waxy yellow, 6 inch by 1_ inch tapered fruits that become hotter as they ripen to red.

Online
Code
7535



CARE & MAINTENANCE

CUIDADO Y MANTENIMIENTO

DAYS TO GERM 10 - 12



DIAS A GERMINAR 10 - 12

DEPTH 1/4 in.



PROFUNDIDAD 6 mm

SPACING 2 1/2 ft. / 18 in.



ESPACIO 75 cm / 45 cm

DAYS TO HARVEST 58 - 85



DIAS DE COSECHA 58 - 85



April - May | Abril - Mayo
March - May | Marzo - Mayo
February - April | Febrero - Abril
December - March | Diciembre - Marzo

Start seeds indoors, 6 to 8 weeks before the last frost. After danger of frost, sow outdoors. Keep beds moist to sprout seeds. Thin when plants are a few inches tall. Transplant to garden after frost. Harden off before transplanting.

Comience a sembrar en interiores, 6 a 8 semanas antes de la helada. Después del peligro de helada, siembre en exteriores. Mantenga las camas húmedas para que retoñen las semillas. Reduzca cuando las plantas tienen unas cuantas pulgadas de alto. Transplante al jardín después de la helada. Aclimate antes de transplantar.



Plantation Products LLC.,
202 S. Washington St.
Norton, MA 02766
ferrymorse.com

PACKED FOR 19 SELL BY 12/19 R1

Annual Herb. The leaves of this attractive herb have a spicy flavor which makes green salads, tomato and cheese dishes, soups and omelets extra delicious. The entire plant has a very pleasing aroma. Good companion for tomato plants.

Planting Instructions:

Start seed indoors near a sunny window 6 weeks before transplanting to the garden. Or, sow in the garden in full sun when frost danger is over and ground is warm. Performs best in rows 2 feet apart. Thin if planted outdoors, or transplant if started indoors to 1 plant every 10 inches when plants are a few inches tall.

Suggestions:

Remove flower buds to encourage leaf growth. Begin harvesting all but 2 - 3 leaves at the base of each branch before flowers bloom. Preserve leaves by drying or freezing.

Days to Germination	Plant Height	Planting Depth	Plant Spacing
5-10	18-24"	1/4"	10"



May - June
April - July
March - June
February - May

Plantation Products LLC.,
202 S. Washington St.
Norton, MA 02766
ferrymorse.com

"Certified Organic by Baystate Organic Certifiers. All Ferry-Morse organic seeds are certified 100% organic in complete accordance with the organic standards established by the United States Department of Agriculture."



BASIL
Sweet

Online
Code
1330

PACKED FOR 19 SELL BY 12/19 R1

Source Search



SOURCE SEARCH

Using an interactive Kahoot Challenge, students will learn that agriculture and natural resources provide nearly all of the products we rely on in any given day.

Eating Plants

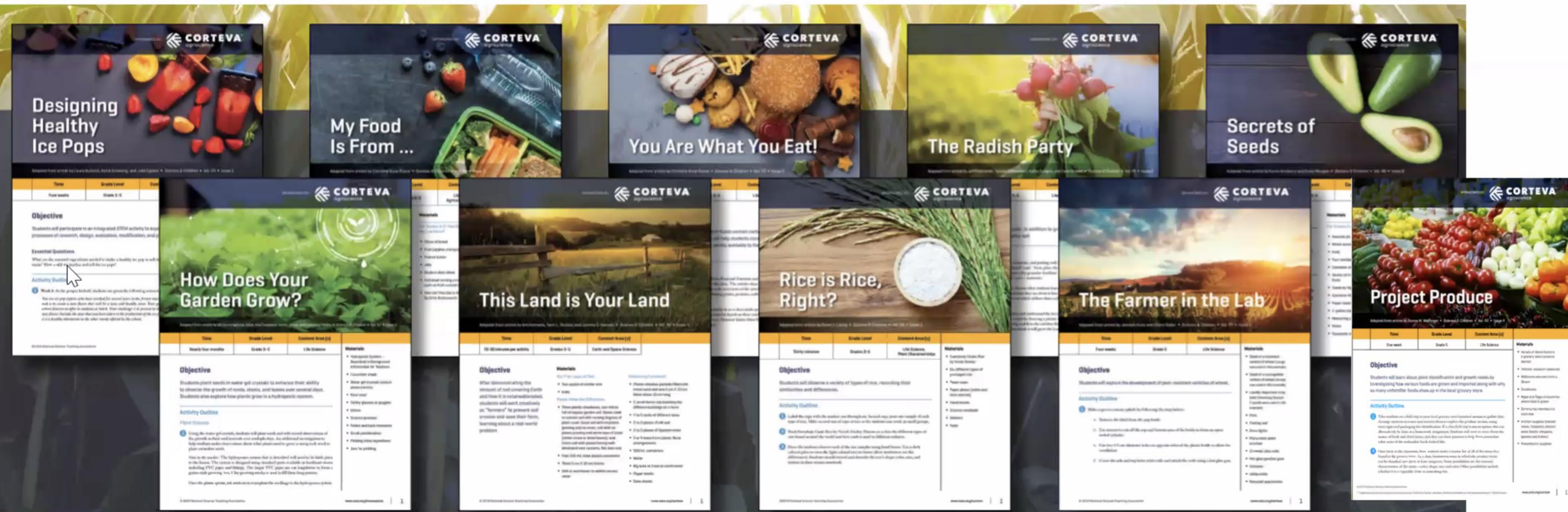


EATING PLANTS

Students will identify the structure and function of six plant parts and classify fruits and vegetables according to which parts of the plants are edible.

[Download PDF](#) or [Copy Google Doc](#)

10 Lesson Plans from the National Science Teaching Association (NSTA)



<https://my.nsta.org/corteva/> or
<https://www.corteva.com/our-impact/enrichinglivestgether/communities/corteva-grows-science-outreach/science-ambassador-activities-and-lesson-plans.html>

SUSTAINABILITY BARREL

ECONOMIC FACTORS:

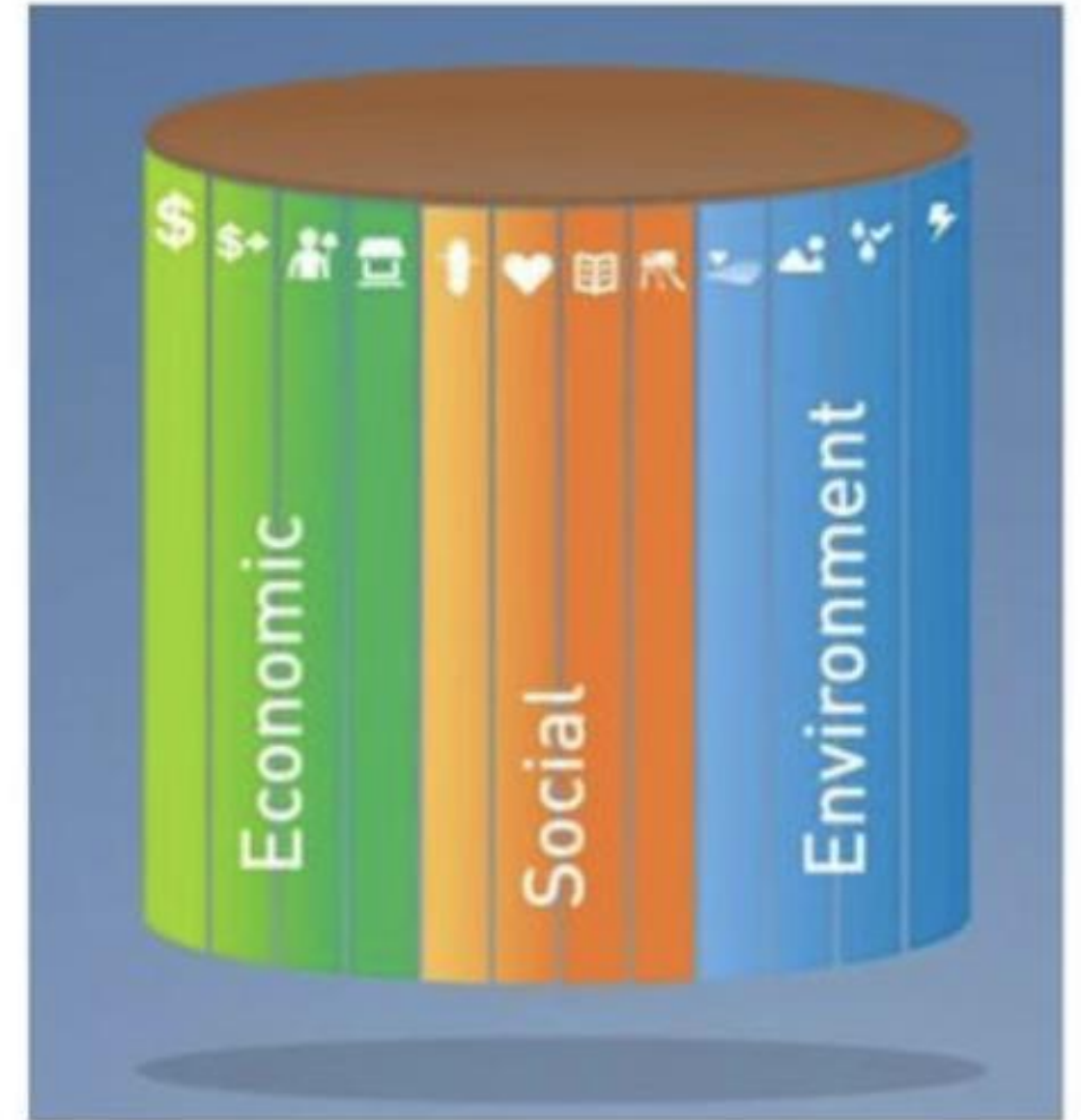
profits, jobs, incomes, community

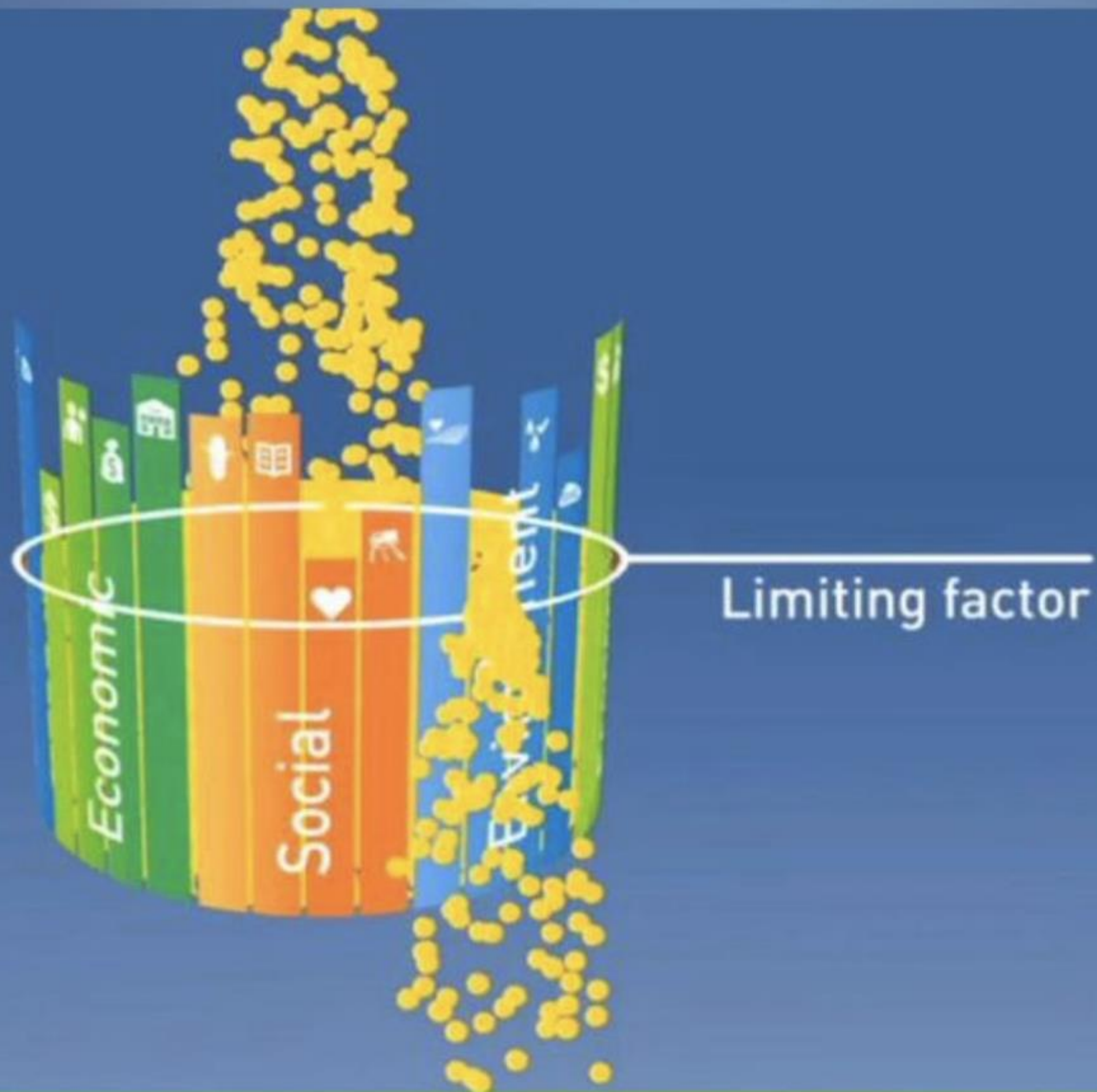
SOCIAL FACTORS:

food, education, health, infrastructure

ENVIRONMENTAL FACTORS:

soil health, habitats, water, greenhouse gases





A community is
only as successful
as the least
developed factor.

We must
continually try to
improve the
weakest one.



Journey

Sustainability Activity



[Register](#)[Sign In](#)[Home](#) [Teacher Experience](#) [J2050 At Home](#) [Student eLearning](#) [Take Action](#) [Resources](#)[Farmers 2050](#) [About](#) [Contact](#)

▼ Hot Topics

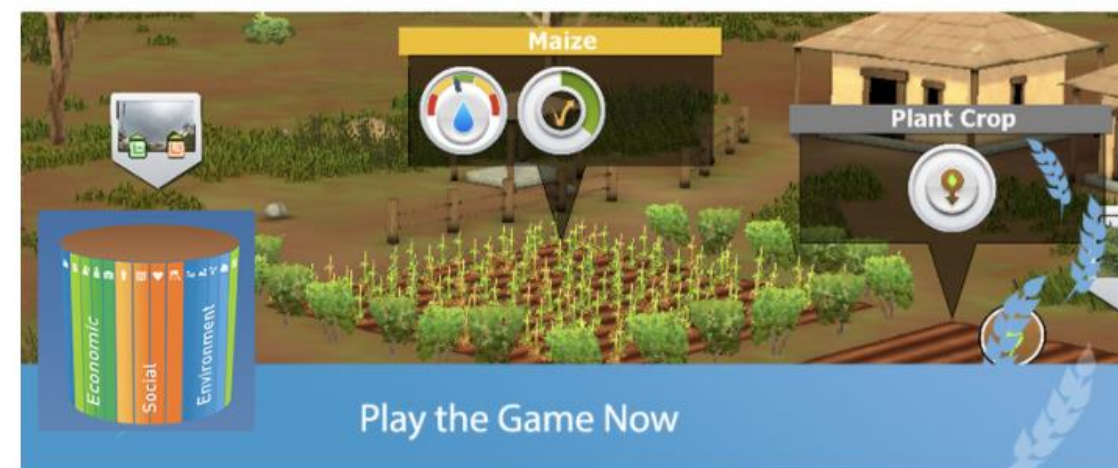
▼ Specific Topics

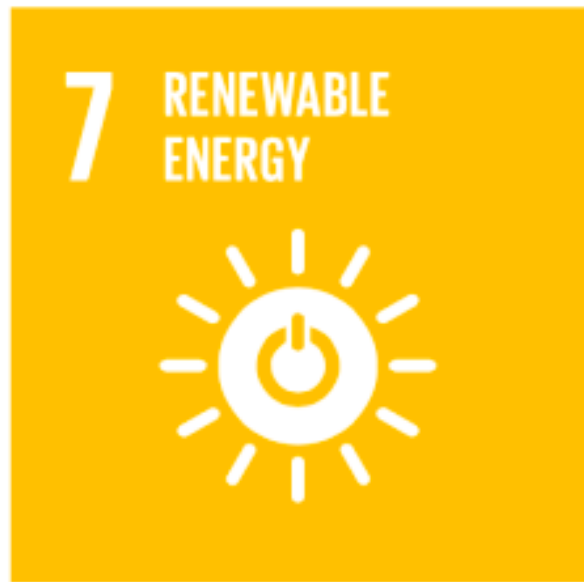
[Reset](#)

How will we sustainably feed nearly 10 billion people by the year 2050?

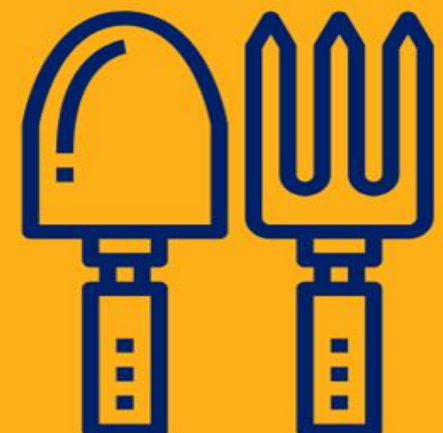
Journey 2050 takes students on a **virtual farm simulation** that **explores world food sustainability**. Using an inquiry based approach the program encourages students to make decisions and adjust them as they see their **impact on society, the environment and the economy at a local and global scale**. The students hear from **farmers across the globe**.

As the student interacts with each family they learn the role of best management practices in feeding the world, reducing environmental impacts and in improving social performance through greater access to education, medical care and community infrastructure. Our Journey to feeding the world has started. Join us.

**WORLD POPULATION:****7,607,538,909****Births this year: 81,600,682****ARABLE LAND:****8,508,077,869 (ha)****Amount Lost: 88,900,778 (ha) *since Jan 1999**



Professional Development Opportunities 2021



EST. 1991

SUMMER AGRICULTURAL INSTITUTE

9 AM - 3 PM
JUNE 14-18, 2021


Supported by the Arizona Foundation for Agricultural Literacy



K-12+ TEACHERS • 5 DAYS • 48 PD HOURS

**Hands-on Experience to Incorporate
Knowledge & Curriculum Materials**

**See food and fiber production in Arizona
up close so you can teach your students about it!**



2021 National Conference

June 28th-July 1st 2021
Des Moines, Iowa

Seeking Workshop Proposals

Deadline **October 16th**



Website Navigation



Thank you for joining me!

Gigette Webb
Associate Area Agent- Ag STEM
Literacy
University of Arizona Cooperative
Extension
gigettewebb@arizona.edu



For more information on school gardens email
ArizonaFarmentoSchool@azed.gov
www.azed.gov



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- Learning Codes: 1230
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- Length: 1 Hour

Please Note: Attendees must document the amount of training hours indicated regardless of the amount of time it takes to complete it.



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