

CLARK COUNTY TEACHERS RAISE SALMON ALL YEAR LONG!

Our Salmon in the Classroom program is unique because teachers can raise salmon ALL YEAR! Clark County teachers raise 10 Coho fingerlings in the fall, before receiving the 250 eggs in January that all Washington SITC participants receive. Introducing the salmon tank at the beginning of the school year increases student investment and allows more opportunities for hands-on learning. Thank you CPU and WDFW for making this program possible!

2018 Fingerling Season Highlights

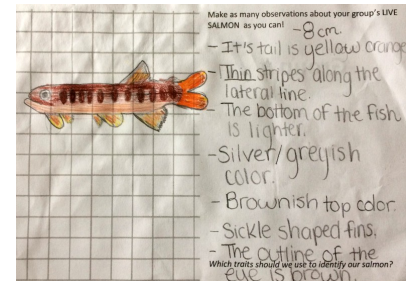
- We personally delivered fingerlings to **48 schools all over Clark County**, driving as far north as Amboy and La Center!
- We increased the number of fish delivery days to 31, up from only 6 days in 2014, which means **teachers can pick delivery dates that fit THEIR schedule and more students can participate.**
- This is the second year we offered a hands-on intro activity on fingerling delivery day, and most schools requested this option. We **engaged 1226 students during fingerling deliveries this year**, up from 263 in 2014!



Salmon in the Classroom is funded by Clark Public Utilities and administered by Columbia Springs.



Mill Plain 3rd graders record scientific observations about their fingerlings at their desks (above). Students use their observations as evidence to identify their salmon. Harmony 5th graders included drawings as evidence (below).



GETTING KIDS NOSE-TO-NOSE WITH THEIR SALMON

We set a goal this year to **increase student investment** in the fall and set the stage for a successful year of salmon learning. Spring is typically the most exciting time for SITC participants - schools get 250 bright pink, wiggly eggs in January and watch them grow for several months. The year ends with a bang in June, when students release their fry on field trips to Salmon Creek. How could we make fall just as exciting when schools only receive 10 fish? We developed an activity to **get kids nose-to-nose with their salmon, and support NGSS learning standards.**



Do YOU know what species of salmon we raise in SITC tanks? How could you find out as a scientist?

In this activity, students make careful scientific observations to identify what species of salmon they have. **Students love the challenge and mystery of the activity, and it forces them to notice what makes their fingerlings unique.**

<p>CHUM</p> <p>Pointy snout, dorsal fin, lateral line</p> <p>Small 24 cm, heavy freshwater ability</p>	<p>CHUM</p>
<p>SOCKEYE</p> <p>Adapted for clear, not pigmented, no spots</p> <p>Pinkish-red, translucent, no spots</p>	<p>SOCKEYE</p>
<p>CHINOOK (King)</p> <p>No spots</p> <p>Adapted for clear, not pigmented, no spots</p> <p>Pinkish-red, translucent, no spots</p>	<p>CHINOOK (King)</p>
<p>COHO (Silver)</p> <p>No spots</p> <p>Adapted for clear, not pigmented, no spots</p> <p>Pinkish-red, translucent, no spots</p>	<p>COHO (Silver)</p>
<p>PINK</p> <p>No spots</p> <p>Adapted for clear, not pigmented, no spots</p> <p>Pinkish-red, translucent, no spots</p>	<p>PINK</p>

Overheard at a Fingerling Delivery

I can't wait to be a marine biologist!

*-4th grader
Fisher's Landing*

I'm going to spend the rest of my life being a scientist. If I have kids I'll do science with them too!

*-3rd grader
Mill Plain Elem*

Is it lunchtime already??? That was so fun the time just flew by!

*-3rd grader
Columbia Valley Elem*

This really connected the students to the salmon and built interest in the SITC experience right from the beginning. —Chief Umtuch 5th grade teacher

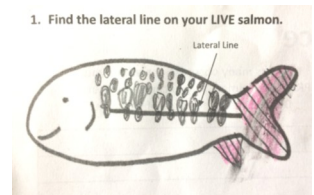
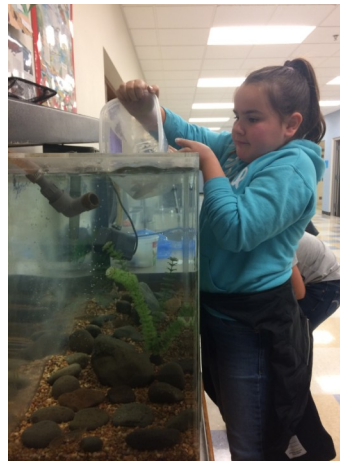
FINGERLING FRENZY!

The vast majority of student contacts for 2018 fingerling deliveries were during a new hands-on activity that supports NGSS learning and connects kids with their salmon. We first introduced this activity in 2017 to create a meaningful opportunity for students to engage with the program at the beginning of the school year. This year, entire teaching teams from the majority of our participating schools requested the ~45-min Fingerling ID activity, and we provided this experience for 1116 students...twice as many as last year!

Year	Delivery Days	Schools Raising Fingerlings	Student Contacts
2014	6	46	263
2015	13	48	504
2016	20	50	668
2017	27	52	980
2018	31	48	1226

2017	Schools	Classes	Student Contacts
Fish Drop-Off	25	N/A	57
Short Intro	11	14	333
Hands-On Activity	16	29	590
Total	52	43	980

2018	Schools	Classes	Student Contacts
Fish Drop-Off	20	N/A	80
Short Intro	1	1	25
Hands-On Activity	27	53	1116
Total	48	54	1226



Supporting NGSS learning through Fingerling ID

In this activity, students make **OBSERVATIONS** about a salmon fingerling at their table.

After reviewing class observations of different characteristics, students **MAKE A CLAIM** about what species of salmon they're raising.

Students then use focused observations of **INHERITED TRAITS** and **PATTERNS** of parr marks as **EVIDENCE to SUPPORT OR REVISE THEIR CLAIM**.

How did we reach so many students this fall?

- **SITC teachers are highly committed to the program.** We recognize that class time is precious, and want to thank teachers for the opportunity to work with their students!
- Because we scheduled so many classroom visits, we **trained two new educators** to lead this activity, in hopes that we can offer more hands-on learning opportunities in the future.

What TRAITS or FEATURES do you notice? - body color - tail color - # of fins - shape of fins - stripe on top - eye size - pattern	1. Find lateral line 2. Make observation 3. Which trait? ↳ Has parr marks? ↳ Do parr marks cross lateral line? ↳ Shape of anal fin?	We think we have _____ Salmon... coho chinook Rainbow	...because we noticed _____ - orange tail outlined in black - parr marks cross lateral line + are thin - body color - adipose fin - dorsal fin - parr marks cross lateral line - has dots on top - Dark colors - Bottom is light color - Bottom of fin is white/orange	Length 8 1/2 cm 9 cm 9 cm 9 cm 9-10 cm 8 cm 6 cm 9 cm
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Using their initial **observations** about their fingerlings, students generate a list of **traits** that we might use to identify our salmon, and make a preliminary **claim supported by evidence**. We focus students' observations on a few key **inherited traits**, and students **revise their claims**. **Focusing on scientific skills and practices made this activity relevant for 1st graders AND 9th graders!**

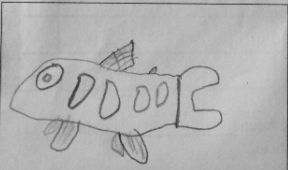
FIELD NOTES

Observation Practice

Name(s) Sonoi Kari B. V. 11/12

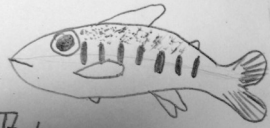
Make as many observations about your PRACTICE salmon as you can in 2 minutes!
Do NOT write the name of your fish!

Can you DRAW any features that make this fish **unique** compared to other types of salmon?



Brown
Brown Strips
Big eyes
dark orange
Silver
lit orange fins
mouth small
6 fangs

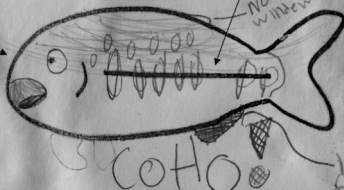
COHO



It has a very pink big eye.
It has a stripes fin across its lateral line. The back tummy fin was a triangle.

.. Find the lateral line on your LIVE salmon.
Chum sockeye chinook coho

4. What do you notice about your salmon?
-DRAW at least 3 details on this fish
-WRITE as many observations as you can about your salmon below.



Dull stripes/spots
orange fins
Pinkness on the sides
clear/yellow eyes
Bottom is white
Top is dark colors

4. I think we have a coho salmon because I notice...

- Patches across lateral line
- anal fin shape triangle
- 2225

3. Which of these TRAITS should we use to identify our salmon?

What I found to be the most valuable part of this activity for my students was the time we took to observe and take notes on the fingerling. My students learned a lot from observing and then having the opportunity to share their observation using clear evidence. —Crestline 4th grade teacher

The most exciting part of this activity was seeing kids defend their observations. They were so invested, and I think making these connections will make the fish releases even more meaningful for students. —Apryl Corey, Columbia Springs educator

We are beginning a unit on traits and characteristics of living organisms. This activity was a perfect connection.

—Mill Plain 3rd grade teacher


We were just getting into our annual water monitoring program and mentoring fifth graders to better understand water quality, salmon habitat and watersheds. The timing of this activity was perfect!

—La Center High School teacher

Salmon observat

I see the fish opening its mouth. I see its moving. It is not blinking. It has stripes. I see fins. I notice it has holes on the bottom of its mouth.

I think I have king salmon fish because they both have a line across the big serkels.



What happens when students don't agree about what species they have?

We remind them:

When we ARGUE as scientists, it makes our science STRONGER, because it forces us to look again at what we think we know. But as SCIENTISTS we always argue RESPECTFULLY and provide EVIDENCE for our CLAIMS.