

Sharing Tails[®]: Teaching Children about Native Arizona Fish

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Why we created Sharing Tails®

- Most Arizonans are surprised to learn that we have fish unique to our state
- A majority of these fish (78%) is federally listed or candidates for listing as endangered or threatened or they are Wildlife of Special Concern in Arizona
- Millions of dollars spent on our native fish

How we created Sharing Tails®

- Researched what native fish information and programs were available to kindergarteners at local, state and federal levels
- Submitted unsolicited proposal to the BR, Phoenix Area Office that coincided with their desire to convey to the public the value of native aquatic species



Sharing Tails[®] K-2 Program

1. Create Microsoft[®] Access school database
2. Develop staff costume
3. Create materials to meet State science standards
4. Develop on-site presentation
5. Develop native fish replicas
6. Perform on-site visits

Sharing Tails[®] Pre-Visit Materials

- Letter with instructions
- Teacher-assisted student questionnaire
- Teacher post-visit survey
- Self-addressed, stamped envelope

Sharing Tails® Pre-Visit Materials

- Coloring guide



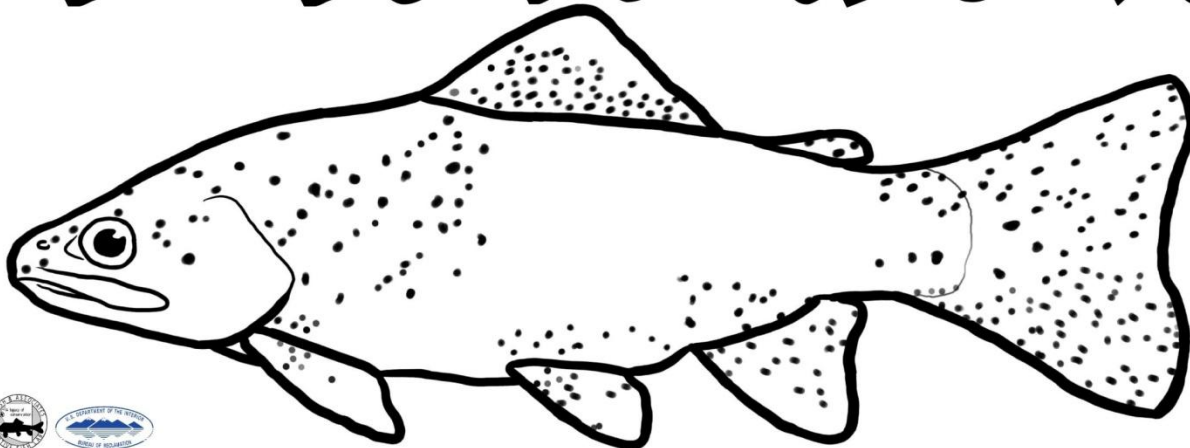
- Location guide to see native fish in Arizona
- List of suggested fish reading for students

Sharing Tails® Pre-Visit Materials

Kindergarten

A native Arizona fish is the...

apache trout

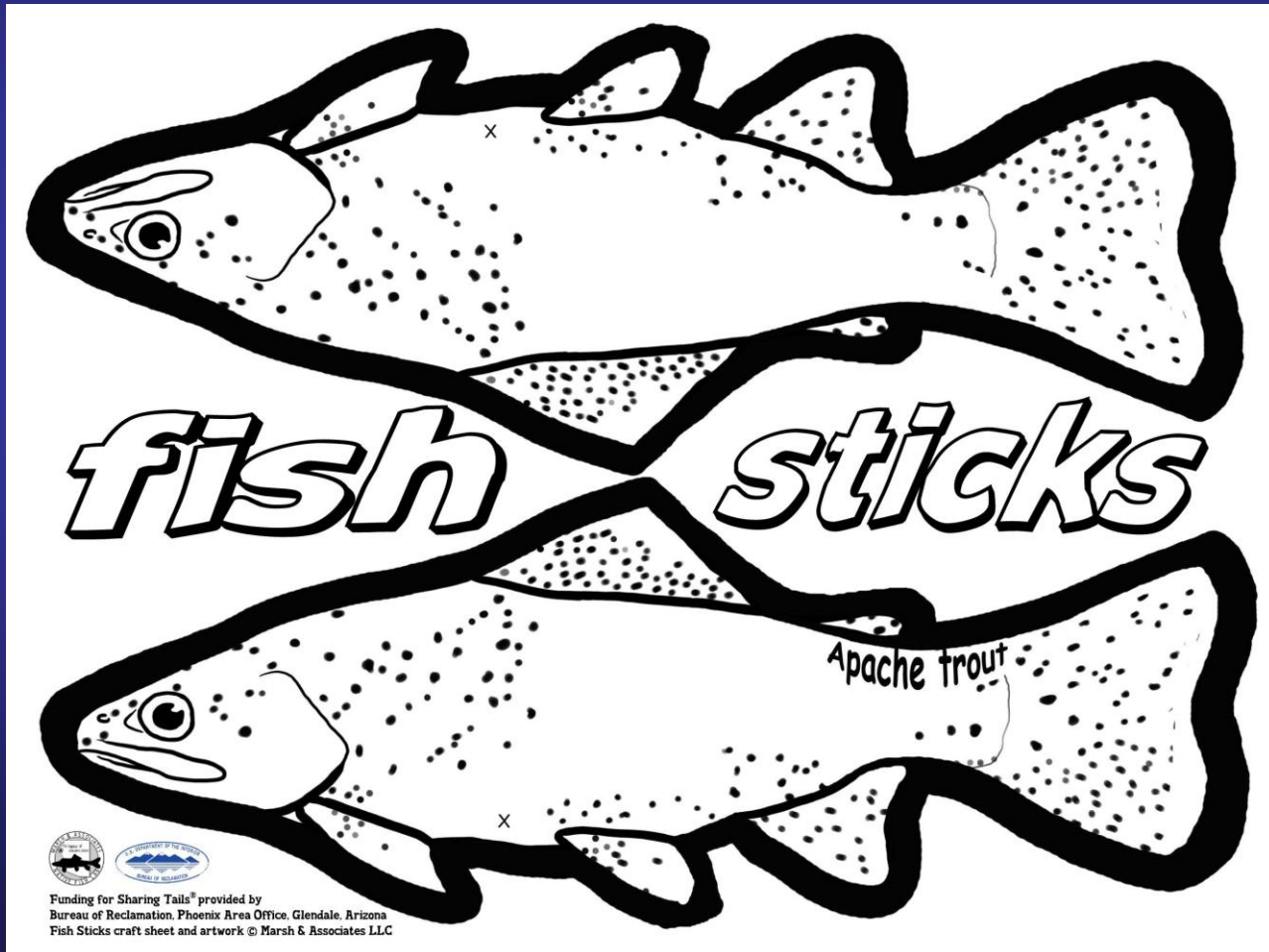


Funding for Sharing Tails® provided by
Bureau of Reclamation, Phoenix Area Office, Glendale, Arizona
Fish Sticks craft sheet and artwork © Marsh & Associates LLC

This is Arizona's state fish!

Sharing Tails® Pre-Visit Materials

Kindergarten

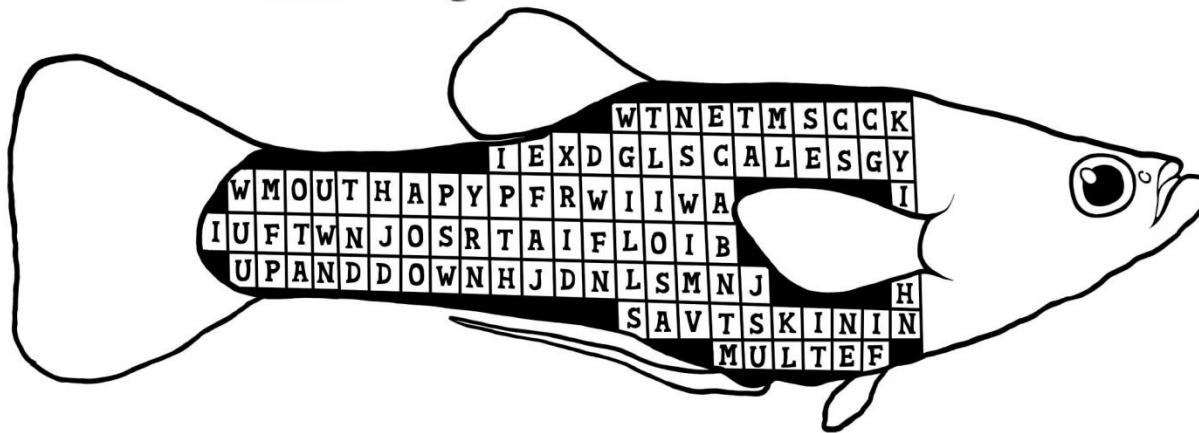


Sharing Tails® Pre-Visit Materials

First Grade

A native Arizona fish is the Gila topminnow.

This fish likes slow moving water!



Circle the best answer then find it in the “fishy” word search!

- | | | | | | | | |
|--------------------------|----------|-----------|--------------|-----------------------------|-------|----------|---------|
| 1. Fish move using their | legs | fins | wings. | 5. Fish breathe using their | lungs | balloons | gills. |
| 2. Fins help fish move | up | down | up and down. | 6. Gills are near a fish's | mouth | tail | food. |
| 3. Fish have | feathers | tree bark | scales. | 7. A backbone helps a fish | fly | swim | run. |
| 4. Scales protect fish | noses | skin | toes. | 8. Backbones are | hard | soft | sticky. |



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Sharing Tails®: Teaching children about native Arizona fish
Art and activity © by Marsh & Associates LLC






Sharing Tails® Pre-Visit Materials

First Grade



Arizona Native Fish Data Book

Name: _____

Observation: The desert pupfish  and loach minnow  are small fish. The desert pupfish and loach minnow are bigger than some first graders' "Number 1" fingers. The Gila topminnow  is also a small fish.

Question: Is a Gila topminnow bigger, smaller or the same as my "Number 1" finger?

Hypothesis: A Gila topminnow is than my "Number 1" finger

Let's investigate!

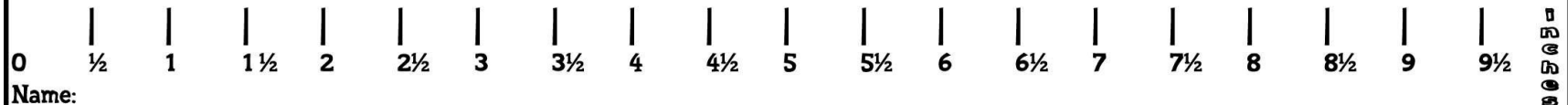
My "Number 1" finger

Gila topminnow

1. My "Number 1" finger is _____ inches.

2. The Gila topminnow is _____ inches.

3. Is my Hypothesis correct?
Yes No

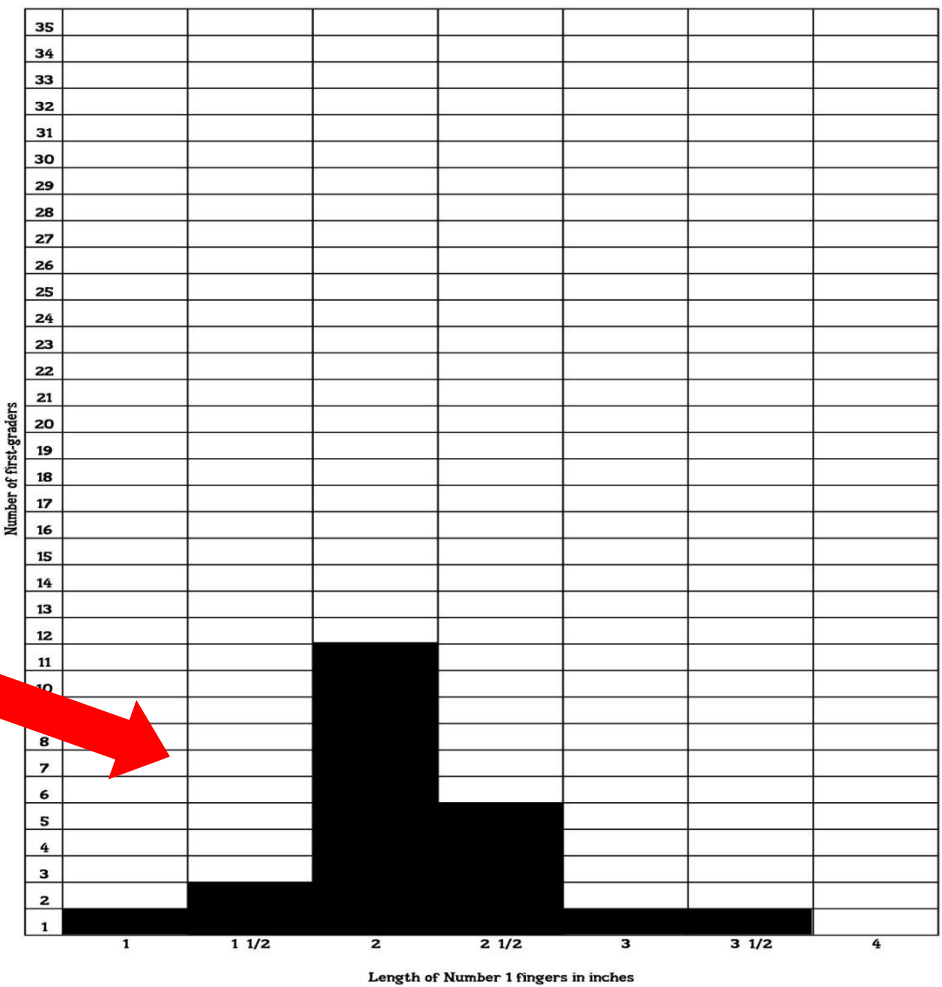


Sharing Tails[®]

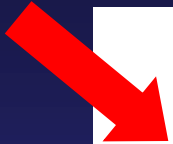
First Grade Teacher Summary Table

Hypothesis results:

"Correct"	6
"Incorrect"	15
Total	21




Notes:



Sharing Tails® Pre-Visit Materials

Second Grade



Second grade!

Arizona Native Fish Data Book

Name: _____

Sharing Tails[®] On-Site Visits



24,000 miles to date!



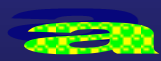
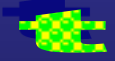
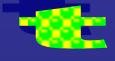
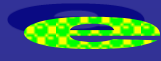
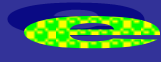
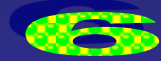


Sharing Tails[®] Presentation

1. Photos
2. Art, clip art and animated-clip art
3. Videos
4. Props
5. Hands-on materials

Sharing Tails® Presentation

Kindergarten Hands-on Materials



Sharing Tails® Presentation

First Grade Hands-on Materials



A hoop net too!

Sharing Tails[®] Presentation

Second Grade Hands-on Materials



Sharing Tails® Presentation

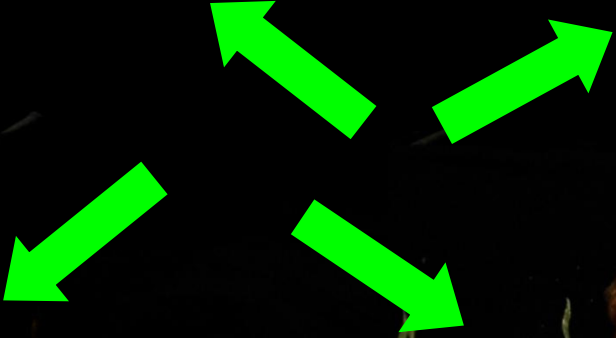
Kindergarten Sharing Tails®

LEFT

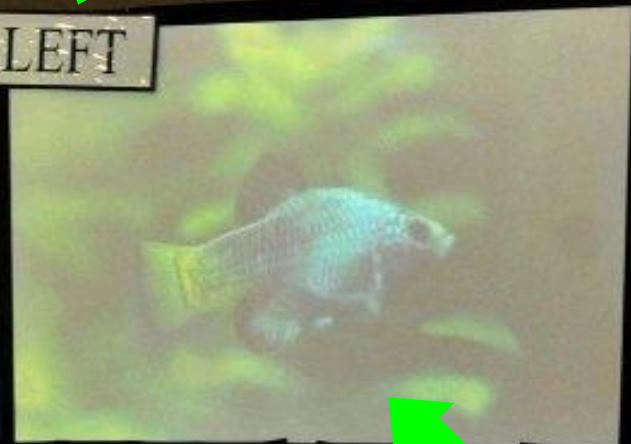
F I *

RIGHT

S * H



LEFT



RIGHT

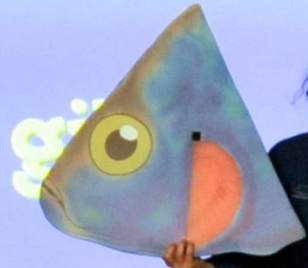


Bubbles, bubbles and more bubbles!



LEFT

RIGHT



oxygen

Desert pupfish and gills!

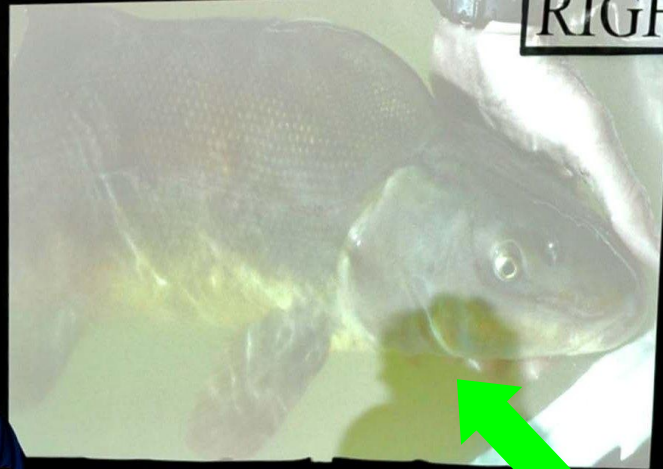


LEFT

razorback
sucker

Name

RIGHT



Photo



Life-sized model



Sharing Tails® Post-Visit Materials

Native Fish Replicas



Sharing Tails[®] On-Site Visits

Year	% Target N Students		
	K	1st	2nd
One	100	-	-
Two	75	25	-
Three	50	25	25

Sharing Tails[®] On-Site Visits

Year	N Students (% Target)		
	K	1st	2nd
One	5,985 (60)	-	-
Two	10,624 (+100)	1,539 (61)	-
Three	4,098 (82)	1,881 (75)	4,86 (19)

Sharing Tails[®] On-Site Visits

Grade	Total N Students (% Target)
K	20,707 (92)
1st	3,420 (68)
2nd	486 (19)
Grand Total	24,613* (82)

*Grand total as of Dec 2010 – 100+ schools scheduled for Spring 2011

Sharing Tails®

Are we making an impact?

I will help protect them!

I will help protect them!



ASHhex

Acknowledgements



**Bureau of Reclamation,
Phoenix Area Office, Glendale, AZ**



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Marsh & Associates, Tempe, AZ**



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Arizona Game and Fish Department**



**Bureau of Reclamation,
Boulder City, NV**

Sharing Tails[®]



Teaching children about native Arizona fish

Marsh & Associates, LLC with USDI BR