

**CALIFORNIA DEPARTMENT OF EDUCATION INFANT TODDLER LEARNING FOUNDATIONS/PRESCHOOL LEARNING FOUNDATIONS
COMMON CORE STANDARDS ACTIVITIES FOR CHILDREN AND PARENTS, AGES 0-COLLEGE**

The Rainbow Fish by Marcus Pfister

LANGUAGE DEVELOPMENT DOMAIN	COGNITIVE DEVELOPMENT DOMAIN	COGNITIVE DEVELOPMENT DOMAIN	SOCIAL EMOTIONAL DEVELOPMENT DOMAIN	PERCEPTUAL MOTOR DEVELOPMENT DOMAIN
BIRTH TO THREE CALIFORNIA INFANT/TODDLER LEARNING AND DEVELOPMENT FOUNDATIONS				
<p>Hold your child or sit close to them while you read the story.</p> <p>Speak in a clear soft voice when reading or talking about the pictures in the book, this will make reading with your child a positive experience and encourage a love of reading.</p>	<p>Count the number of fish on each page while pointing to the pictures.</p> <p>Name the pictures in the book as you read the story if you see a pattern point it out to your child.</p>	<p>Talk with your child about the Rainbow fish book while talking a bath, point out that the Rainbow fish lives in the water.</p> <p>Show your child how to make bubbles in a glass of water. Talk about how Fish make bubbles when they breathe.</p>	<p>Use emotion words while reading the Rainbow fish story such as happy, sad, upset, lonely, angry).</p> <p>Show your child in the mirror what a happy, sad, mad, upset or angry face looks like. Next time they are happy, sad, or upset point it out to them by saying, "I see you are sad, like Rainbow fish".</p>	<p>Dance or move like a fish with your child. Move your arms in a swimming motion, wiggle like a fish. (large motor).</p> <p>Fill a tub or shallow pan with water or sand and practice pouring water and feeling the texture of the sand. Place fish or sea toys in the water or shells in the sand. (fine and perceptual motor).</p>
PRESCHOOL 4 TO 5 YEARS CALIFORNIA INFANT/TODDLER PRESCHOOL LEARNING FOUNDATION				
<p>After reading the book have your child "read" or tell the story to you.</p> <p>Act out the story using pictures of characters in the book or homemade puppets.</p> <p>Talk about different parts of the fish – scales, fins, tail, eyes, mouth (vocabulary building and science).</p>	<p>Find items in your home that relate to pictures in the book and count them.</p> <p>Count how many of each type of fish and make a chart on paper of how many of each.</p> <p>Compare items with the pictures in the Rainbow Fish book see if you can find patterns.</p>	<p>Discuss where rainbow fish lives, and watch educational movies, look at books or visit a pet store to see how fish breathe under water.</p> <p>Show your child how to make his own bubbles by blowing through a straw into a cup of water. See what happens when you blow soft, hard or really hard. Ask your child questions about what happened when they blew hard or soft.</p>	<p>Discuss why the rainbow fish lost his friends and how he became friends with the other fish in the end of the story.</p> <p>Check out books from the library about friendship and read them with your child.</p>	<p>Have your child draw a fish and then finger paint it with rainbow colors (tin foil or sequins can also be glued onto the fish).</p> <p>Find songs or movement games about fish at the library</p> <p>Encourage your child to try and move like different sea creatures (fish, octopus, snail, shark).</p>

LANGUAGE ARTS	MATH	SCIENCE	SOCIAL STUDIES	VISUAL & PERFORMING ARTS/SOCIAL AND EMOTIONAL
PRIMARY ELEMENTARY AGES 6-8				
<p>Have your child point to the words as you read to them; or let your child read the words that they recognize (like Rainbow Fish, the, and).</p> <p>Practice reading words using flashcards to help your child recognize words and increase sight reading vocabulary.</p> <p>Read about different types of sea creatures.</p>	<p>Write an equation using the number of regular scales and number of shiny scales that Rainbow Fish has in the beginning of the story.</p> <p>Play the Rainbow Fish game “<i>How Many Scales</i>” to help your child discover the relationships between numbers in math families (like $5=2+3$, $5=3+2$, $5-3=2$, $5-2=3$)</p> <p>Set up a subtraction problem when the rainbow fish gives away shiny scales.</p>	<p>Discuss where rainbow fish lives, and watch movies, look at books or visit a pet store to find out what different fish eat.</p> <p>Learn how your eyes see as you help the goldfish find his way back to his fish bowl with an optical illusion.</p> <p>How do fish move their fins and tails to help them swim?</p>	<p>Learn the names of the four major oceans in the world (Pacific, Atlantic, Indian, Arctic) and where to find them on a map.</p> <p>Learn about how Native American’s used the ocean to help them survive.</p>	<p>Create a model of a fish and water color the scales.</p> <p>Use a show box and construct an ocean full of different types of sea life.</p>
HIGHER ELEMENTARY AGES 9-11				
<p>Have your child read the book to you or a younger child.</p> <p>Have your child share a story from their lives that is similar to Rainbow Fish.</p> <p>Study ecosystems that support sea life</p>	<p>At the beginning of the story, what fraction of the scales on the right side of Rainbow Fish’s body are silver?</p> <p>Give an equivalent fraction from the task above.</p> <p>Express the total number of scales Rainbow Fish has as a product of its prime factors.</p> <p>Since most fishes are symmetrical, predict how many silver scales Rainbow fish has all together on both sides of his body.</p>	<p>Describe all the different components in Rainbow Fish’s environment, and determine which are living and which are not living.</p> <p>With his shiny silver scales, would the ocean be the safest place for Rainbow Fish to live, or would he be too easy for bigger fish to find and eat?</p>	<p>Learn how people are using the resources in the ocean (like fish, kelp, etc.).</p> <p>Identify the Pacific Ocean, rivers, valleys, and mountain passes on a map and explain their effect on the growth of towns in California.</p> <p>Describe how the location of water effected the placements of California’s Missions.</p>	<p>Draw a picture of an ocean scene, and describe how foreground, middle ground, and background are used to create the illusion of space.</p> <p>Paint a picture of an ocean scene and compare/contrast it with your drawing, including the use of positive and negative space.</p>

LANGUAGE ARTS	MATH	SCIENCE	SOCIAL STUDIES	VISUAL & PERFORMING ARTS/SOCIAL AND EMOTIONAL
MIDDLE AGES 12-13				
<p>Have your child read the book to you or a younger child.</p> <p>Ask your child to write another story about what happens to Rainbow Fish next. They can illustrate their story and make a book out of it.</p>	<p>At the beginning of the story, what percentage of the scales on the right side of Rainbow Fish's body are silver?</p> <p>Express the ratio of Rainbow Fish's number of fins to total number of scales.</p> <p>Choose a fish that gets a silver scale from Rainbow Fish, and calculate the percentage of scales on one side of the fish's body to their silver scale.</p>	<p>Research an ocean habitat and identify one of the food chains that exist in that environment.</p> <p>For the habitat that you researched, list the properties (temperature, water flow, available plan live, etc.) that affect the number of organisms which that ecosystem can support.</p> <p>When you tilt the Rainbow Fish book slowly back and forth, the silver scales look like they are changing color. Research the way that light can be reflected and refracted to explain why you see these colors.</p>	<p>Identify the one major river system that influenced the rise of an ancient culture in the Middle East, Greece, Italy, or India. Locate the river(s) on a map and explain the influence that the location of the river had to the people.</p> <p>Identify the physical features and describe the climate of the Arabian peninsula, its relationship to surrounding bodies of land and water, and nomadic and sedentary ways of life.</p> <p>Learn about the Niger River and the relationship of vegetation zones of forest, savannah and desert to trade in gold, salt, food, and slaves during the Growth of the Ghana and Mali empires</p>	<p>Find works of art from different periods of history that share an ocean/seaside theme and describe how balance is used in them work of art.</p> <p>Also describe how the role of the visual arts changes during different periods of history.</p> <p>In addition, compare. Contrast, and analyze styles of art from a variety of times and places in Western and Nonwestern cultures.</p>
HIGH AGES 14-17				
<p>Have your child read the book to you or a younger child.</p> <p>Write a poem or song about Rainbow Fish and illustrate it for a under child.</p> <p>Study the fishing industry along the Pacific Ocean. What does the fishing industry do to prevent over-fishing and keep ocean habitats intact?</p>	<p>Create a statistical analysis of the various types of fish that live at the different latitudes in the ocean.</p> <p>Use geometric shapes, their measures and their properties to describe a fish.</p>	<p>Research the habitats at different latitudes in the Pacific ocean and identify some of the major differences in the organisms that survive at different latitudes.</p>	<p>Learn how America's access to 2 different oceans helped the country's economic growth throughout its history.</p>	<p>Make a found sculpture of an ocean creature paying attention to the proportions and texture of the animal.</p> <p>Explain why you chose the different materials you used in your art.</p>

LANGUAGE ARTS	MATH	SCIENCE	SOCIAL STUDIES	VISUAL & PERFORMING ARTS/SOCIAL AND EMOTIONAL
COLLEGE AGES 18 AND BEYOND				
<p>Research the impact of global warming on sea food production.</p> <p>Study the impact of the ocean's contributions to alternative sources of energy.</p>	<p>Develop a mathematical comparison of the varies types of fish species that are represented in the book.</p>	<p>Study the extinction of fish due to global warming.</p> <p>Identify five strategies to minimize the extinction of endangered fish species.</p>	<p>Create a chart of fish families that support reproduction of endangered species.</p> <p>Identify new combinations of fish species in the last 500 years.</p>	<p>Create an artistic rendering of sea life living in the various latitudes of the ocean.</p> <p>Recreate the rainbow fish's shiny scales using foil and water colors in a collage.</p>

Examples of Infant, Toddler, Preschool Desired Results Developmental Profile Measures Included in Activities:

- Measure 21 - Letter and work knowledge (language and literacy)
- Measure 9 - Interactions with adults (social emotional)
- Measure 31 – Gross motor development

Examples of Elementary Through College Common Core Standards Included in Activities:

- Informational text (e.g. relationships and interactions between two more individuals, events, ideas, or concepts in text)
- Compare and contrast (e.g. chronology, comparison, cause/effect, problem/solution in two or more texts)
- Compare measures, classify, and count objects (e.g. convert like measures, interpret data, draw inferences, justify conclusions)

RAINBOW FISH: LANGUAGE ACTIVITIES FOR PARENTS TO DO WITH CHILDREN AT HOME

- AGES 0-3 -

- Read the book with your child, naming the pictures in the book as you point to each item. Take your time and allow your child time to process what you are saying and time to look at the pictures.
- Find items or pictures in your house of ocean life and point them out to your child. Example, if you have fish, starfish or other ocean life animals that are bath toys, show this to your child and say, “this is a fish, just like the fish in the book we read today”. Your child will benefit from hearing as much language as possible.
- While reading the book to your child allows them to point at the pages and talk about the book.
- Talk about the colors and shapes you see as you read the book.
- Look for the colors that you saw in Rainbow Fish around your house and point them out to your child.
- Be positive when talking to your child about the book and make eye contact while reading.
- Have your child sit on your lap while you read the book, this will help build a positive relationship with your child and positive experiences of reading.
- Additional books to read:
 - Rainbow fish
 - Rainbow fish sticker books
 - Splish Splash by Joan Bransfield Graham
 - Fishes by Brian Wildsmith
 - Fish Eyes: A Book you Can Count on by Louise Ehler
 - Swimmy by Leo Lionni
 - Fish is Fish by Leo Lionni

MATH ACTIVITIES FOR PARENTS TO DO WITH CHILDREN AT HOME

- AGES 0-3 -

- Count the fish, fish scales or plants in the book as you point to each item say the number you are counting out loud.
- Look for opportunities to count items throughout your daily routine such as, books, socks, toys, dolls, baby bottles, diapers and silverware.
- Name a pattern you see in the book, example shiny scale - non shiny scale - shiny scale - non shiny scale. Another example might be big fish - little fish - big fish - little fish.
- Try to find patterns in your home and point them out to your child, example square, circle, square, circle on your child’s shirt.
- Look for shapes in the book and talk to your child about shapes that might be the same around your home.
- Talk with your child about your daily routine, example - first we eat breakfast then we play at the park or after we eat we can take a bath then read a book. Using the words such as first, second, third, fourth, or next helps your child start developing sequences which is a pre-math skill.



SCIENCE ACTIVITIES FOR PARENTS TO DO WITH CHILDREN AT HOME
- AGES 0-3 -

- Start your own fish tank or visit a pet store to look at fish tanks.
- Talk with your child daily about what fish need to stay alive and how you are taking care of the fish or how the pet store takes care of the fish.
- Talk with your child about the fish and how he might be the same or different from the fish in the rainbow fish story.
- Notice if anything changes in your fish tank and talk to your child about the changes or visit the fish store again and notice if there are any changes in the pet store fish tank.
- Allow your child to play with sand (supervise closely) talk about how the sand feels and how sand is at the bottom of the ocean and on the beach.
- Fill a small tub with water and toys allow your child to play in the water (with adult supervision).
- Blow bubbles with or for your child.

SOCIAL STUDIES/SOCIAL AND EMOTIONAL LITERACY ACTIVITIES FOR PARENTS TO DO WITH CHILDREN AT HOME
- AGES 0-3 -

- Talk with your child about the feelings in the Rainbow fish book for example, how did he feel when his friends would not play with him. And when he gave out scales how did he feel?
- When your child is sad or cries, talk to him/her about how they are feeling.
- Develop a feelings list of words for you to use with your child (happy, sad, mad, angry, upset, or tired) you can expand your list beyond the feeling in the book.
- Point out when another family member is happy, sad or upset and also when your child is experiencing these emotions. This will help them develop the sense that feelings are okay.
- Use simple sign language with your child to express feelings (see enclosed examples).
- If your child is older have him/her draw pictures of how they are feeling.
- Additional books to read about feelings:
 - My Friend Bear, by Jez Alborough
 - My Friend Is Sad, by Mo Willems
 - My Friend, the Starfinder, by George Ella
 - Lyon, illus. by Stephen Gammell
 - Peanut by Linas Alsenas
 - Mine! Mine! Mine! by Shelly Becker, illus.
 - by Hideko Takahash



VISUAL AND PERFORMING ARTS ACTIVITIES FOR PARENTS TO DO WITH CHILDREN AT HOME
- AGES 0-3 -

- Finger paint with your child make a fish or other shape (using non toxic paint).
- Make a fish puppet to use while you retell the story with your child about Rainbow fish. (Instructions enclosed).
- Use the puppet you've made to pretend you are Rainbow fish and act out some parts of the book for your child.
- Make a print of your child's hand by painting their hand then press it to a paper. When it dries draw eyes, nose and a mouth.
- Fill a bucket with water and let your child pretend he is Rainbow fish by play in the water, add toy boats, ducks or fish (adult supervision required).

LANGUAGE ARTS RAINBOW FISH ACTIVITIES FOR PARENTS TO DO WITH CHILDREN AT HOME
- AGES 4-5 -

- Read the book with your child, naming the pictures in the book as you point to each new item.
- Allow your child to read the story to you and allow them to make up their own story.
- Find items in your house or other pictures of sea life then talk with your child about the items. See if they are different or the same as what you saw in the Rainbow Fish book. In the chart below, draw or list the items and pictures found in each room in the house and count the total in each room. (See sample below.)

Items or pictures	Room Location	Number in Room
<ul style="list-style-type: none"> • Fish stuffed animal • Fish squeaky toy • Aquarium globe • Picture of sea life 	Bedroom	4

- See if you can find words in the book that have the same letters as your child's first name.
- Give you child a pencil and paper to draw their own story, staple pages together to make a book if needed and number the pages in the book.



- In the chart below draw sea life pictures of the words listed in the chart. This helps your child expand their vocabulary.

Sea life object	Picture of object
Fish	
Star fish	
Crab	
Octopus	
Sea shells	

- Talk about ways your child’s friends similarities or difference and how they compare to Rainbow Fish’s friends.
- Cut out pictures of ocean life and glue them on a paper to make a collage.
- Check out books from the library about fish or ocean life.

**MATH ACTIVITIES FOR PARENTS TO DO WITH CHILDREN AT HOME
- AGES 4-5 -**

- Count the fish, scales or plants in the book and as you point at each item say the number you are counting out loud.
- Look for patterns on Rainbow fish and have your child point to and say the pattern.
- Look for patterns around your house, on your clothing or outside (nature has many patterns).
- Make patterns with items in your house (example, small cars, blocks, or rocks).
- Cut out shiny items from a magazine and then make a pattern with the items.
- Look for shapes while driving in the car, waiting line at the store or when you are reading other books.
- Sing songs that have counting in them such as 5 little monkeys jumping on the bed (see enclosed).
- Play simple board games with your child such as Candy Land or Chutes and ladders.
- Roll dice with your child and count all the numbers and then help your child count the numbers on both dice to add them up.
- Count socks, shirts, shoes or other items in the house.



- Count how many fish are in the Rainbow Fish book and graph results. (California Preschool Curriculum Framework, 2.0 understanding number relationships and operations page 255)

Sea life object	Number found in Rainbow Fish book
Octopus	2
Star fish	
Crab	
Fish	
Sea shells	

- Start a piggy bank with your child and help them count all the coins they have collected.

Penny	Nickel	Dime	Quarter	Dollar bill	Five dollar bill
12	2	8	1	6	2

- While making dinner show your child the recipe you are using and allow them to measure items (with adult supervision). Use measuring spoons and cups to show your child how to read the recipe and then put all the ingredients together to create a meal. Use measurement words, more, less, $\frac{1}{4}$, $\frac{1}{3}$, $\frac{1}{2}$, $\frac{3}{4}$, full, half full, empty, allow your child to estimate the amount it might take to fill 1 cup.
- Below are questions you can ask your child to help them make comparisons and estimations
 - Which group has more?
 - Can you tell without counting?
 - How many more are in this group?
 - How many will be left if we take away 5?
 - How many balls do you think are in the jar?
 - How many steps are outside the door?
 - How many seeds are inside the apple?

SCIENCE ACTIVITIES FOR PARENTS TO DO WITH CHILDREN AT HOME
- AGES 4-5 -

- Start your own fish tank with a small fish bowl or take your child to a pet store to look at the fish.
- Talk with your child daily about what the fish needs to stay alive. Allow your child to help care for the fish. Or feed the fish at the pet store.
- Talk with your child about the fish and how he might be the same or different than the rainbow fish. See how fishes in books or at the pet store are the same or different than Rainbow Fish.
- Compare fish you have purchased with fish from the book, talk about size, shape, color, fins or the fish's tail.
- Talk about who might be a predator of the Rainbow fish or which animals that live in the ocean might want to eat the Rainbow fish.



- Talk about ways to take care of the ocean by not letting plastic bags go into the ocean while having a picnic. Teach your child about how man made items that end up in the ocean may harm the animals that live in the ocean.
- Read books about ocean life and learn more about the ocean. Find out what a coral reef is or study the habitat in which sharks, seals, dolphins or whales like to live in.
- Visit an aquarium or fishery.
- Research with your child what kind of fish the Rainbow fish might be. Do you think he is a sunflower fish, whale, or guppy? Talk about the differences of fish that live in salt water verses fresh water.
- Find out how much salt is in sea water and make a glass of water to taste. Talk about how it tastes with your child.

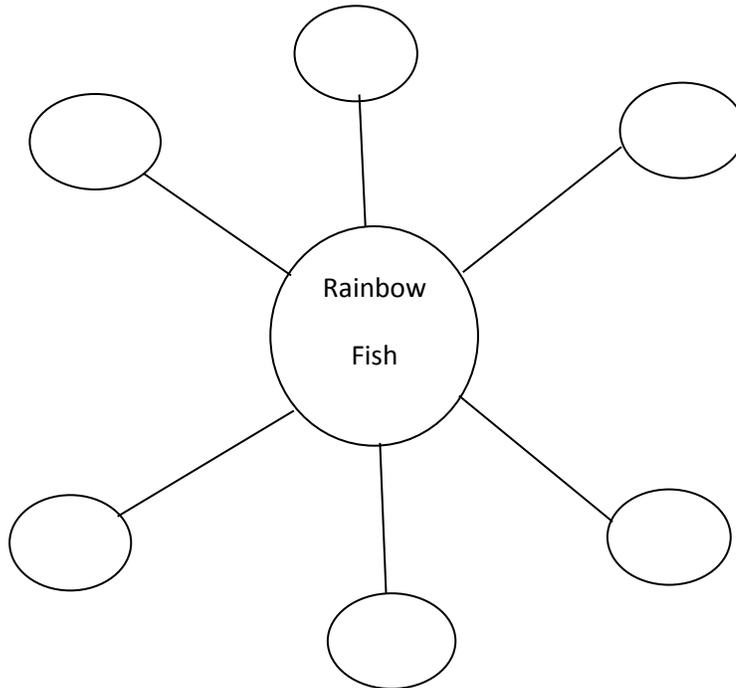
**SOCIAL STUDIES/SOCIAL AND EMOTIONAL LITERACY ACTIVITIES FOR PARENTS TO DO WITH CHILDREN AT HOME
- AGES 4-5 -**

- Have your child cut out a fish (with assistance if necessary) and glue shiny items on the fish.
- Let your child draw and color their own fish.
- Cut out the characters of the story, color and then glue on sticks- use them to act out the story of the rainbow fish.
- Act out the story of the Rainbow fish with your child. Be playful and have fun with your child allowing them to be silly and choose how to act out the story.
- Talk about how rainbow fish might feel at different times in the story, happy, sad, lonely, or scared.
- Take your child to check out books about Rainbow fish or other ocean life.
- Read books about friendships (see attached list).
- Develop a list of feelings people might have by cutting out faces of people in magazines and making a feeling poster. When your child feels one of the emotions have them point to the picture of how they are feeling and discuss what they can do about their feelings.
- Talk about friendships and encourage your child to play with other children at the park or in your neighborhood. Help them make friends at school or the park if necessary. Discuss how to be a good friend and why Rainbow fish was a good friend.
- Talk about your child's friends and role play how they can be a good friend. Demonstrate how they could respond when a friend is mean to them or takes a toy away.
- Model for your child how to be a good friend by talking about what you do with your friends.
- Discuss how hard it is to share toys when friends visit and how good it feels when we do share just like the Rainbow fish shared his scales.



VISUAL AND PERFORMING ARTS ACTIVITIES FOR PARENTS TO DO WITH CHILDREN AT HOME
- AGES 4-5 -

- Make sock puppets to act out the Rainbow Fish story (see enclosed instructions).
- Plan with your child the characters in the story and who will act out each character. Allow your child to take the lead and have fun with your child. Use the flow chart below to plan out the characters of your story.



- Let you child paint or draw pictures of the Rainbow fish story.
- Then use the pictures to help your child and other family members to act out parts or the entire story.
- Let you child cut out pictures from magazines and glue them on paper to make a collage about the Rainbow Fish book.
- Turn on music and encourage your child to pretend they are swimming like a fish.



Rainbow Fish Song

To the tune of Twinkle, Twinkle, Little Star
Lyrics by Sandi Yellenberg

Rainbow Fish, how do you do?
Pescadito de Arcoiris cómo estas?

I'd like to be friends with you.
Yo tu amigo quiero ser.

With your silver scales you swim,
Con tus escamas plateaditas nadarás

Swishing slowly your tail fin
Tu aleta menearas

Rainbow Fish would you please share.
Pescadito por favor comparte

One small scale they are so rare.
Una escamita pido yo.

Little Blue Fish I say, "No"
Pecezito Azul te digo "No"

My scales stay on my back so,
Mis escamas no las doy

When I swim by all can see,
Al nadir todos ven

Just how pretty I can be.
Que tan bonito puedo ser.

Little Blue Fish go away
Pecezito Azul alejate ya

On my back my scales will stay.
Mis escamas no te puedo dar

Rainbow Fish found out that day,
El pecezito ese día descubió

No one else wanted to play
Nadie mas quiere jugar

With a selfish fish as he
Con un pez egoista como el

All alone now in the sea
Solito se va quedar en el mar

Rainbow Fish must change his ways
Pez tu manera de pensar debes cambiar

Or be lonely all his days.
O estar solo todos los dias.

Blue Fish I have changed my mind
Pecezito Azul he cambiado de pensar

Here's a scale for you. I find
Aquí esta un escama para regular

When I share with every fish
Cuando comparte con los peces

Finally I get my wish,
Mi deseo al fin se cumple

To play all day with a friend
De jugar todo el día con un amigo

Brings happiness in the end.
Trae alegría al final.

Directions:

Cut out these flash cards. They have words from the Rainbow Fish story. Use these cards to help your child practice reading these words. When you read books to your child, help them point to the words as you read them. Let them read any words that they know how to. You can make more flashcards to help your child learn how to read more words.

Rainbow

fish

ocean

beautiful

scales

the

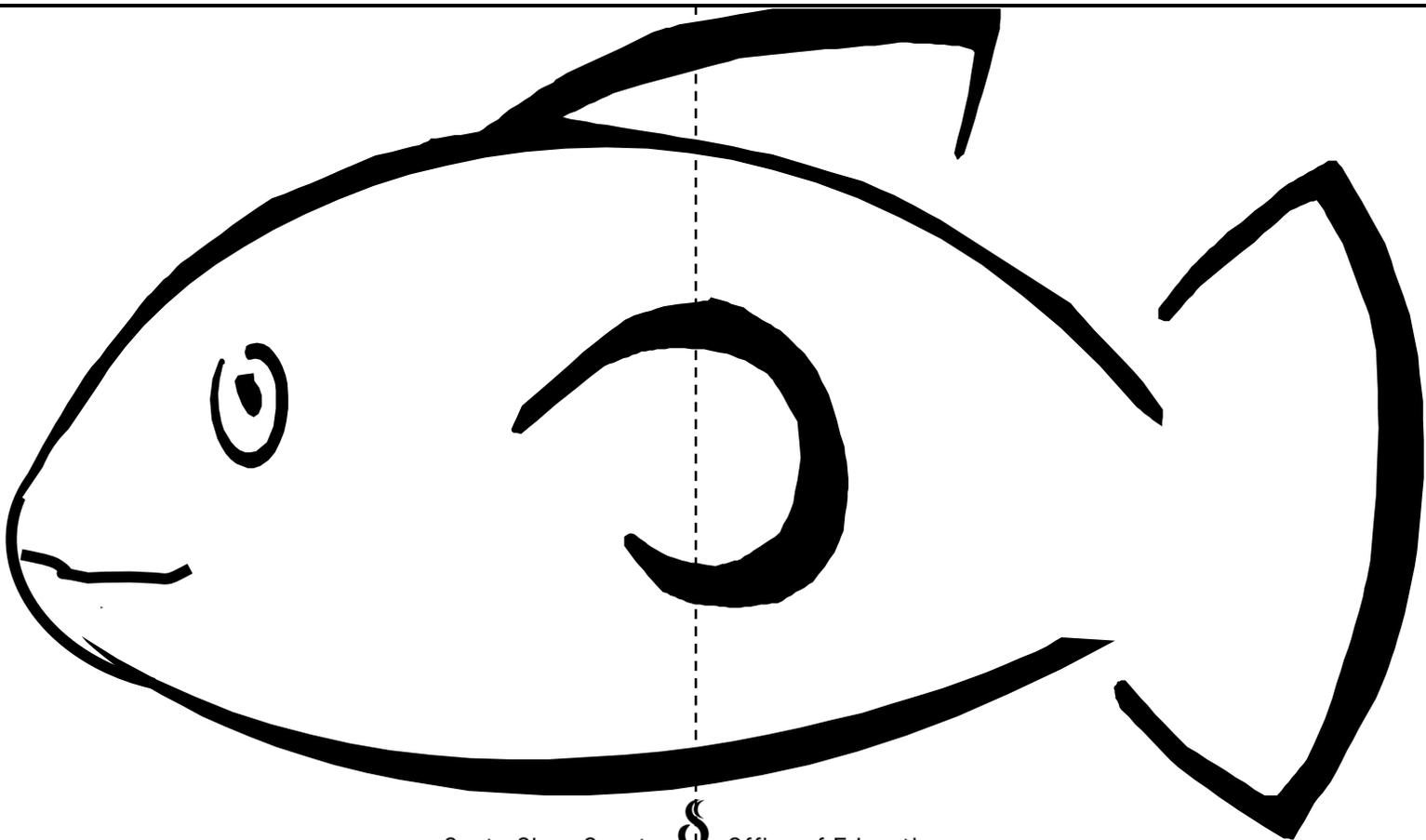
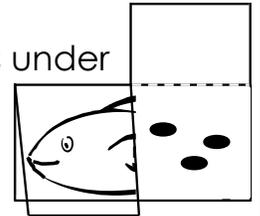
Blue

play

Rainbow Fish Math Equations

Directions to make a number fish:

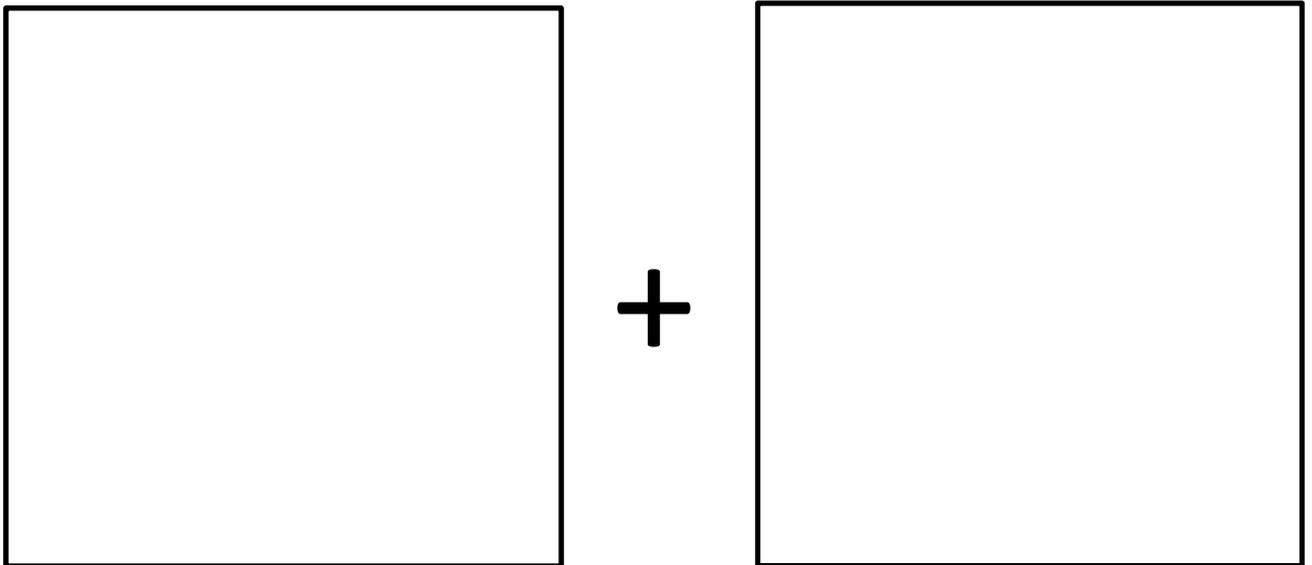
1. Cut up the middle of the fish, on the dotted line – stop cutting at the solid line
2. Fold the paper in half on the solid line, so you can still see the fish.
3. Write a number from 5-10 on the fish's fin.
4. Lift up the fish's head and have your child draw scales on the paper under the head. The number of scales that they draw should be equal to or less than the number on the fish fin.
5. Lift up the fish's tail and draw enough scales so that the scales under the head + the scales under the tail = the number on the fin.
6. To play *How Many Scales?* Have your child read the number on the fishes fin. Let them lift up either the head or tail and count the number of scales there. Ask, "How many scales are under the other part of the fish?" Help your child figure out the answer.
7. Make fishes with different numbers and play again. Save the fish to keep learning and playing together.



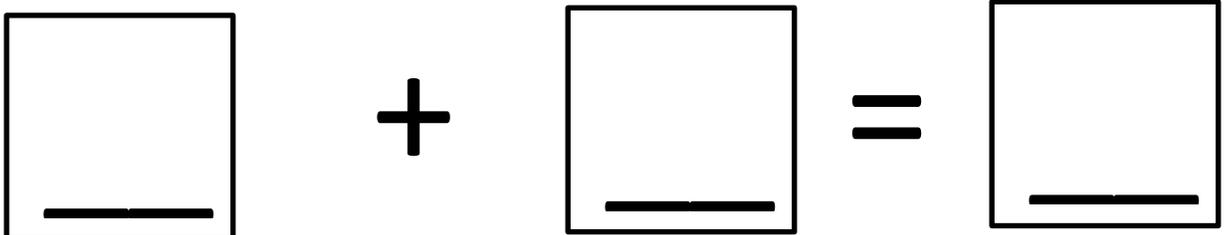
Rainbow Fish Math Equations

Directions for addition:

1. Use paper “fish” scales or buttons.
2. Put some of the silver scales (or some buttons) in the 1st box.
3. Take away some of the “silver scales” (or some buttons) from the 1st box, and put them in the 2nd box.
4. Count the number of items in the 1st box. Write the number in the space provided below the 1st box.
5. Count the number of items in the 2nd box. Write the number in the space provided below the 2nd box.
6. Count all the items in *both* boxes and write the total (the sum) in the box provided.
7. Make up a story to explain what happened to the fish’s scales in the math equation you just wrote.



Use numbers to write your equation here.

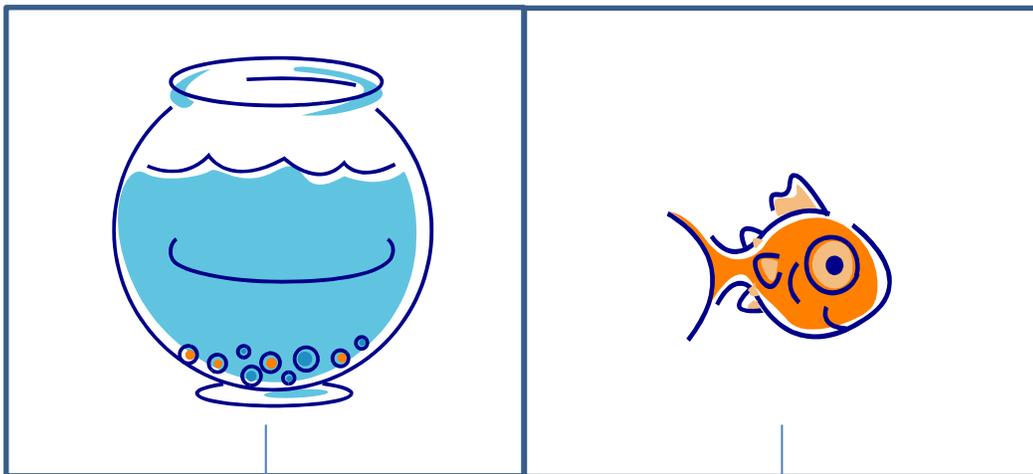
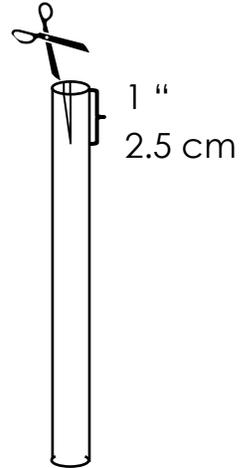

$$\square + \square = \square$$

Rainbow Fish Science

Rainbow fish has a friend named Goldie. Rainbow Fish is very sad because Goldie has jumped out of her fish bowl. Fish need to stay in the water to live. Help Goldie get back into her fish bowl.

Directions:

1. Cut out the rectangle with the fish and the bowl.
2. Fold over the fish and bowl so you can still see them.
3. Cut 1 inch (2.5 cm) down a straw.
4. Place the folded paper into the slit in the straw.
5. Tape the straw to the paper on both sides.
6. Hold the straw between your hands and spin it by rolling your hands back and forth.
7. What do you see?



How does this work?

The answer is persistence of vision. Our eyes can still see an image for an additional 1/20 of a second after it is gone. When you spin the pictures faster than 20 times a second, your eye is still seeing the fish at the same time that it is looking at the bowl, so your brain thinks it is seeing both pictures at the same time.