CREATIVE PROBLEM-SOLVING

How are "Creative Thinking and Problem-Solving" seen in *George Shrinks*?

George Shrinks (the series and character) provide wonderfully illustrative models for creative thinking and problem-solving. Because of his small size, George meets obstacles in every show. To face them, he may: figure out how to make gadgets and tools out of found objects, problem solve (on issues like figuring out how to keep ants away from a picnic), or he may use a simple item (like a paper clip or Q-tip) to creatively come up with a unique solution. George is actually the epitome of creativity as he forms original ideas through diverse exploration and discovery.

Why are "Creative Thinking and Problem Solving" Important?

> Imagination is more important than knowledge.
> – Albert Einstein

Creative Thinking and Problem-Solving are at the root of scientific discovery and finding unique, untried solutions to difficult problems. In this age of "the all important test score" we should consider the benefits of keeping a balanced curriculum -- including the teaching of facts and formulas and incorporating opportunities for open-ended questioning, creativity, experimentation and exploration.

Research describes the act of only using drill and rote learning (where there is only one absolute answer to be memorized) as a major block to creative thinking. And even children as young as four and five can start to enjoy the experience of learning while acting as young investigators and discoverers!

A note about the activities in this section:

> To Invent, you need a good imagination and a pile of junk.
> – Thomas Edison

Several activities in the next section necessitate recycled or donated items, so be sure to plan ahead and start gathering materials far enough in advance! (Use the letter toward back of guide to ask parents to contribute inexpensive objects from home.)

The following activities provide opportunities for children to practice making their own choices and decisions. Note that learning areas and themes can be strengthened by first taping and showing the associated *George Shrinks* episode (listed at the top of each page), reading and discussing any associated story or book – and then conducting the hands-on activity or lesson with children. Be sure to tie together the common themes of the show, book and activity with plenty of discussion and analysis!

BEING A PARTNER WITH NATURE

Acting as a caregiver for animals by making a Bird Feeder.

Learning Area: Classifying, Analyzing, Responsibility, Empathy
Episode: ***"Small of the Wild"*** ***Synopsis:*** A winter storm has left George's house without power. It has also knocked down a tree that provides food and shelter for some tree dwelling animals. George and Becky set out to help their animal neighbors.

Objectives:

Children will:
* Identify the needs of living creatures (food, water, shelter).
* Discuss the ways in which people can help animals survive.
* List ways in which children can become responsible caretakers.
* Create a bird feeder

Grades: K-2

McRel Standard(s): Life Sciences - Standard 6.1, Knows that plants and animals need certain resources for energy and growth (e.g. food, water, light, air). Life Skills - Thinking and Reasoning Standard 1.1, Classifies objects by size, color, or other signifi cant characteristics.

Core Curriculum Area(s): Language Arts, Life Science

Materials Needed: chart paper and markers, pictures of animals, pine cones (or child's milk cartons), peanut butter, birdseed or rye grass, tongue depressors or plastic knives, measuring cup, small paper cups, colored string, sealable plastic bags, tray or large paper plates (if being done outside)

Think & Do Activity Description:

1. Present animal pictures to children and ask them to identify the species by name.

2. Ask children to classify the animals into groups–mammals, reptiles, birds, fish, etc. (Explain any unknown concepts, as needed.)

3. Encourage them to classify the same pictures again into groupings of their own choosing. Examples: night hunters (nocturnal), day hunters, wild or domestic, carnivorous or vegetarian. See if other children can guess the criteria being used. (Model this activity by grouping some photos and seeing if children can guess your classification.)

4. Ask students: "What do all these animals have in common? What do they all need? What can we do to help the animals get their needs met?" (Chart children's responses.)

5. Explain that as responsible caregivers, we can provide food for wild birds during the winter.

6. Provide each child with: a pine cone, 1/4 cup peanut butter, tongue depressor or plastic knife, 1/4 cup birdseed or grass seed. (Do as an outdoor activity or provide each child with a tray or paper plate to contain birdseed.) *If pinecones are unavailable, a child's milk or juice carton can be used in the same way.

7. Have children spread peanut butter all over the pinecone or juice carton. Peanut butter provides a delectable, edible glue! The birdseed or rye grass is sprinkled on the sticky pinecone. Tie a string to the top so that it can easily be hung outside. Place in a sealed plastic bag if the bird feeder is being sent home.

Suggested Readings	*Home Connections*	*Teacher Tips*
"The Cactus Hotel" by Brenda Z. Guiberson "The Great Kapok Tree" by Lynne Cherry "The Mountain That Loved the Bird" by Alice McLerran		

GOOD FOR ME

Distinguishing between healthy foods and junk foods.

Learning Area: Analyzing Information, Validating Judgment
Episode: ***"Space Invaders"*** ***Synopsis:*** When George and Becky have a science fiction movie-thon sleepover, too much junk food (pizza and candy) lead to weird dreams for George.

Objectives:

Children will:
* Distinguish between healthy foods and "junk foods."
* Construct a floor graph of healthy foods and junk foods.
* Take a "Healthy Foods" poll using a graph.

Grades: K-2

McRel Standard(s): Health - Standard 6, Understands essential concepts about nutrition and diet. Math – Standard 2.3, Understands symbolic, concrete, or pictorial representations of numerals, objects in sets, number lines.
Core Curriculum Area(s): Health, Language Arts

Materials Needed: magazines, scissors, materials to make floor graph: [butcher paper, marker], handout on next page, paper bag

Think & Do Activity Preparation:

1. Gather magazines with plenty of "healthy" and "junk" food photos.

2. Create a floor graph titled, "Healthy Foods, Junk Foods." (See example on next page.)

Think & Do Activity Description:

1. Gather children in a circle on the rug with the magazines and scissors. Let them know that today they are going on a special food hunt! Their job is to find photos of different foods, cut them out, then put them in the big paper bag in the middle of the circle.

2. Talk about food and why it is so important. After some discussion, ask if all foods are good for us. Talk about the fact that some foods are healthier than others. But both kinds can taste good. Sometimes we call foods with less nutritional value "junk foods." Ask children to give examples of both food types.

3. Introduce the floor graph. Tell students that one row will be for healthy foods and the other row will be for junk foods.

4. Have one child at a time go to the bag and pull out a photo. Have them hold up the picture and tell what it is. Then have him/her decide which graph row to put it on: Healthy Foods column or Junk Foods column. Check with classmates to see if they agree or disagree (and expect that there will be some differing opinions).

5. Ask children to examine the floor graph and to name some of their favorite healthy foods. Put the names of these foods in the spaces provided on the handout "Healthy Foods" graph. Run off several copies and attach to clip boards. Instruct the children on how to take a personal poll, i.e.: Go up to a classmate and say, "Which of these healthy foods do you like best?" Then put an "X' in that square. Model this with the help of another student. (Taking the poll will be an independent work activity.)

Suggested Reading	*Home Connections*	*Teacher Tips*
"Growing Vegetable Soup" by Lois Ehlert "Oliver's Vegetables" by Vivian French "The Race Against Junk Food" by Anthony Buono	Children may also conduct the healthy foods poll with friends and family members at home.	

HEALTHY FOODS GRAPH

HEALTHY FOODS										
JUNK FOODS										

BIGGER THAN I AM!

Using creativity and teamwork to build a large group sculpture.

Learning Area: Creative Thinking, Imagination, Teamwork, Collaboration
Episode: ***"If It Ain't Broke"*** ***Synopsis:*** It's dad's birthday and the family wants to do something nice for him. Mom makes him a special sculpture—and George and Jr. set out to create the "perfect" birthday card.

Objectives:

Children will:
* Discuss different art projects that they like making for people who are special to them.
* Listen to a story about sculptures and sculptors – then discuss how they can work together as artists.
* Learn how recyclable material can be used in artistic creations – then construct a large group sculpture.

Grades: K-2

McRel Standard(s): Arts - Visual Arts-Standard 1.1, Knows the difference between art materials, techniques,and processes.

Core Curriculum Area(s): Art, Language Arts

Materials Needed: books about sculptors and sculpture, masking tape, glue, tempura, yarn, string, ribbons, tissue paper, different colored recycled papers, cardboard pieces, a large cardboard box or carpet roll, paper tubes, cloth scraps, buttons, any other reusable or scrap material, note to parents/guardians, paper strip (for title), marker

Think & Do Activity Preparation:

Write a note to parents/guardians about this activity – including the need for specific recyclable materials to be brought in from home (if possible).

Think & Do Activity Description:

1. Talk with the children about different art projects they like to make for family and friends (i.e., cards, paintings, drawings, clay figures, etc.).

2. Ask them if they'd like to learn about a project they can work on together, as artists.

3. Ask if anyone knows what a sculpture is. Who has seen one?

4. Share a book about sculptors and sculptures – then follow with a discussion. Explain to the children that there are many artists who make art with "recyclables" or things that we call "junk." Tell them they will be creating a sculpture together that will be larger than they are!

5. The first job will be to bring in recyclables. Brainstorm a list of possibilities. (See the list above.) Bring in something that is large and sturdy for the base and armament of the sculpture–a carpet roll, large cardboard box (or combination of the two).

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Suggested Reading	*Home Connections*	*Teacher Tips*
"Leonardo's House" by Jean Fritz, "The Story of the Statue of Liberty" by Guilio Maestro		

Think & Do Activity Description: Cont'd

6. Pass out the parent/guardian note and allow time for materials to be brought in from home.

7. After items have been collected, gather the children together to discuss the process:
   a) Five children may work together at one time.
   b) Everyone will have a turn.
   c) Everything must attach firmly to the sculpture.
   d) The sculpture needs to balance and stand on its own. (What will be needed to do this?)

8. Divide children into working groups. (Adult supervision is necessary to help problem-solve throughout the process).

9. When every group has had an opportunity to work on the sculpture and the children consider their work complete, allow them to walk around their artistic creation and talk about it. What words would they use to describe it? Does it remind them of anything? How does it make them feel? How did it feel to work on it together? What would they name it?

10. Take suggestions for titles and then have the class vote on one. Write out the title and place it near the sculpture.

HELP GEORGE TRAVEL

Creating a new travel vehicle for George Shrinks!

Learning Area: Creative Problem-Solving
Episode: This activity is associated with any *George Shrinks* episode since a key element of the show is George's use of a unique Zoopercar for travel.

Objectives:

Children will:
* Discuss different types of vehicles and modes of transportation.
* Discuss what it is to be an inventor.
* Collect an array of recyclable materials.
* Invent a new vehicle for George, name it and describe how it works.

Grades: K-2

McRel Standard(s): Technology Standard 5.2, Knows that when parts are put together, they can do things that they couldn't do by themselves.

Core Curriculum Area(s): Language Arts, Science

Materials Needed: Recyclables: paper towel rolls, buttons, bottle caps, paper clips, keys cartons, string, wire, styrofoam, springs-all kinds of odds and ends! Work Area: Invention Table (supplied with scotch tape, masking tape, stapler, scissors and glue) note to parents/guardians

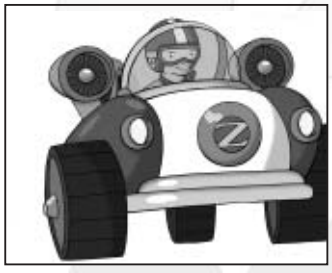
Think & Do Activity Description:

1. Explain to the children that George Shrinks is a smaller than average person—only 3 inches tall! Due to his size, George often uses a unique Zoopercar to travel and get himself and others out of tight situations. While his Zoopercar is in the shop for repairs, George needs help getting around. What vehicle can you make for George? (See picture of George's vehicle.)

2. Discuss different ways of travel. Ask students if they can invent a unique way for George to get around. Will it be something like the Zoopercar (which can travel on land, sea and in the air)?

3. Tell children they will each have a turn at the Invention Table—and will be able to work until their creation is complete.

4. Provide time each day for children to show and describe their completed inventions to the class.



Suggested Reading	*Home Connections*	*Teacher Tips*
"Odds N Ends Alvy" by John Frank (out of print) "Gizmos & Gadgets: Creating Science" by Jill Frankel Hauser	Send a note home to parents/guardians asking them to help their child collect reusable odds and ends that will be used for art, science and math projects. Include the list above for suggestions.	Encourage children to bring in recyclable items throughout the year. Have them sort, label and categorize them. These items can be used for various school projects. Provide storage space for incomplete work.

WHAT CAN YOU MAKE?

The young discoverer in action…working with an Invention Table.

Learning Area: Creative Problem Solving
Episode: This activity is associated with any *George Shrinks* episode since a key element of the show lies in George's ability to make new, creative objects out of everyday materials!

Objectives:

Children will:
* Talk about being an inventor.
* Collect an array of recyclables.
* Create an invention, name it, then describe how it works.

Grades: K-2

McRel Standard(s): Technology standard 5.2, Knows that when parts are put together, they can do things that they couldn't do by themselves.
Core Curriculum Area(s): Language Arts, Science

Materials Needed: junk store-area for all the junk parts, all kinds of fun junk! [cartons, string, wire, styrofoam, springs, keys, broken machines to be disassembled and used for parts—all kinds of odds and ends!], work area with: [scotch tape, masking tape, stapler, scissors, and glue]

Think & Do Activity Preparation:

Establish an area of the classroom in which to store junk and create an Invention Table. Possibly create (or have children make) a sign designating this as an invention space.

Think & Do Activity Description:

1. Ask your students: "If you were an inventor, what would you invent to make things easier?" The inventions can be real or imaginary (i.e., a bed-making machine, a shoe-tying machine, etc.) Encourage children to use their imaginations when coming up with ideas!

2. Tell the class that for the next week they will be collecting "good junk" to be used to make things. "Good junk" is any recyclable item that can be used to create or build something else. (Give examples from the list above.)

3. After the items are gathered, allow a few days for the children to disassemble things.

4. Tell the children that they will all have a turn working at the Invention Table and will be able to work until their creation is complete.

5. Provide time each day for children to describe their completed inventions to the class.

6. As an extension, set up an Invention Museum to which children can invite other classrooms.

Suggested Reading	*Home Connections*	*Teacher Tips*
"So You Want to be an Inventor?" by Judith St. George & David Small "If" by Sarah Perry "Mud is Cake" by Pam Munoz Ryan	Notify parents of this project. Encourage them to contribute "good junk" and if possible to participate as volunteers sharing their knowledge and expertise.	Assign children specific dates and time to work at the invention center. Post a Closed sign when center is not available. This activity will generate enthusiasm and some noise.

THE FIXIT SHOP

Setting up and working with a Repair Shop in the dramatic play area.

Learning Area: Fluent and Flexible Thinking, Creative Problem-Solving, Reflection
Episode: ***"In The Duck Soup," Synopsis:*** When Jr.'s favorite security object, his toy duck, no longer works properly—George helps find someone who can repair it.

Objectives:

Children will:
* Think about a favorite toy they had when they were very young.
* Draw a picture of their favorite current toy.
* Discuss how they would feel if (or when) it broke or no longer worked.
* Identify different ways things can be repaired.
* Set up and utilize a fix-it shop in the dramatic play area.

Grades: K-2

McRel Standard(s): Life Skills – Working With Others-Standard 2.3, Works well with diverse groups in diverse situations.

Core Curriculum Area(s): Language Arts, Social Studies

Materials Needed: dramatic play area where children can set up a "Fix It Shop," items for Fixit Shop: [a sign, (made by children), cash register (can be a simple box to hold play money), play money (children can make this), receipt tablets, various tools (screwdrivers, pliers, glue, string, etc.), a few less than perfect toys and games]

Think & Do Activity Description:

1. Ask the children if they can remember a very special toy they had when they were little. What was it? Do they still have it? Did it break or stop working properly? Did someone fix it for them?

2. Ask children to draw their current favorite toy. Then talk with them about how they might feel if it broke or no longer worked properly. Who would they go to to fix it – or how might they try to fix it themselves?

3. Generate a list of different types of repair shops (car, shoe, watch, etc.)–and discuss why they are important. Ask: "What do these shops look like? Who works there? What do the different employees do? What kinds of tools do they need? How do they stay safe when they are working?"

4. Tell the children that they will be setting up a toy repair shop. Brainstorm with them about what will be needed.

5. Help them set up the dramatic play area, assigning different tasks.

6. Allow the area to remain in the classroom until everyone has had ample opportunity to work there (or until interest has waned).

Suggested Reading	*Home Connections*	*Teacher Tips*
"Mike Mulligan and His Steam Shovel" by Virginia Lee Burton, "The Shoemaker and the Elves " by Jakob Grimm and Wilhelm Grimm "Joseph Had a Little Overcoat" by Simms Taback		Inviting children to take an active role in setting up the dramatic play area will foster ownership of the activity. Always examine broken toys carefully to ensure safety (sharp edges, dangerous products, i.e. mercury, etc.)

MAKING MUSIC CAN BE FUN!

Creating percussion instruments from household items and discards.

Learning Area: Creative Problem-Solving, Creative Expression
Episode: ***"George-Lo-Phone" Synopsis:*** George wants to join a talent show band, but is not allowed to because of his size. He overcomes this problem by working with his dad to create an unusual instrument – and winds up having fun playing music with the whole family!

Objectives:

Children will:
* Talk about the experience of learning how to play an instrument.
* Learn about percussion instruments and how bands and orchestras make unusual instruments from very ordinary things.
* Create their own instrument that can be used in a class percussion band.

Grades: K-2

McRel Standard(s): Music Standard 2, Performs on instruments alone and with others, a varied repertoire of music.

Core Curriculum Area(s): Performing Arts

Materials Needed: cassette or CD player and a variety of music (jazz, classical, rock & roll, children's), a display of a variety of percussion instruments, odds and ends to make instruments (beans, containers, paper mache´ materials, doweling of various widths and lengths, glue, tape, paint)

Think & Do Activity Preparation:

Set out a display of percussion instruments as examples (if available).

Think & Do Activity Description:

1. Talk with children about the experience of learning how to play an instrument. Ask: "What is fun about it? What is hard? Does it get easier as you practice? If you aren't learning how to play an instrument, which one would you like to learn? How do you think you could learn to play it? What might be hard about learning it? What might be fun?"

2. Make a list of instruments that the children, their siblings or their parents can play. Find out if any of them would be called percussion instruments. (Explain "percussion" as needed.)

3. Let children know that percussionists often have to be creative. They may need to use regular household things in unusual ways.

4. Have children bring in items for a Music-Making Center (i.e., metal and wooden spoons, pots and pans, tin cans, and keys on a string).

5. Provide children with the opportunity to go to the Center and create their own instruments.

#6-8 Continued on next page

Suggested Reading	*Home Connections*	*Teacher Tips*
"The Bremen-Town Musicians" by Jack Kent "Zin! Zin! Zin! A Violin" by Margorie Priceman "Lilly's Purple Plastic Purse" by Kevin Henkes	Invite parents who play an instrument to share their knowledge and music. Ask that they discuss how they learned to play the instrument and what was both hard and fun about the process!	Provide time and opportunity for all children to make and decorate at least one instrument!

Think & Do Activity Description: Cont'd

6. Select one child to be a conductor and have children divide themselves into three groups based on how their instrument makes sound (i.e., Shakers, Hitters, Blowers).

7. Distinguish between making music and making noise. Have them accompany different types of music using their instruments. Invite another class to share in the experience.

8. Follow-up by talking with the children about what was fun about making and playing their instruments – and what was hard?

IMAGINARY ANIMALS

Conceiving and creating imaginary animal masks.

Learning Area: Brainstorming, Creativity, Imagination
Episode: ***"If I Ran The Circus"*** ***Synopsis:*** When the circus comes to town, Jr. is stuck at home with the chicken pox.

Objectives:

Children will:
* Talk about real animals that they have seen.
* Discuss the word "imagination" and talk about imaginary animals.
* Brainstorm about different types of animals they might create.
* Create masks of imaginary animals.

Grades: K-2

McRel Standard(s): Visual Arts - Standard 1.4, Uses art materials in a safe and responsible manner. Language Arts – Listening and Speaking-Standard 2.1, Uses descriptive words to convey basic ideas.
Core Curriculum Area(s): Art, Language Arts

Materials Needed: books about different kinds of real and imaginary animals (circus animals, wild animals, pets, dragons, unicorns, dinosaurs, etc.), paper plates, scissors, popsicle sticks, tempera paints, paint brushes, white glue, pipe cleaners, feathers, cotton balls, and other odds and ends

Think & Do Activity Preparation:

Cut eye holes out of standard-sized paper plates.

Think & Do Activity Description:

1. Ask the children to generate a list of real animals that they have seen in the circus, at the zoo, as pets, etc.

2. Ask: "What does it mean to use your imagination?" Ask them to close their eyes and imagine a pretend animal. What might it look like? Show pictures from storybooks of imaginary animals (dragons, unicorns, Dr. Seuss characters).

3. Refer to the list of real animals and ask the children to play a word game combining parts of animal names: Cowrse (cow and horse), Zabbit (rabbit and zebra), Bizzard (bird and a lizard). With each new name, ask: " What might that animal look like? Can you show us how it might move?"

4. Gather the children around the Mask-Making Center. Tell them that they each will have an opportunity to create an imaginary animal mask. Demonstrate use of glue and other materials as needed. When masks are complete, help children to attach their popsicle sticks as mask holders.

5. Invite children to join in an "imaginary animal" circus parade around the room.

Suggested Reading	*Home Connections*	*Teacher Tips*
"Horton Hatches an Egg" by Dr. Seuss "And to Think I Saw it on Mulberry Street" by Dr. Seuss		Follow-up with a puzzle-collage activity. Children cut up pictures of animals into three parts (head – body – legs-tail). Then invite children to create new imaginary animals, mixing up the different body parts.

I HAVE A DREAM

Working to make the world a better place.

Learning Area: Fluent & Flexible Thinking, Defining and Solving a Problem
Episode: ***"Close Encounters of the Bird Kind"*** ***Synopsis:*** George sets out in search of good deeds in order to become a hero.

Objectives:

Children will:
* Learn about modern day heroes: Martin Luther King Jr., Rosa Parks, Caesar Chavez and/or others.
* Discuss their wishes for a better world.
* With drawings and words, illustrate one thing they will do to help make the world a better place.

Grades: K-2

McRel Standard(s): History – Standard 4.2, Understands how individuals have worked to achieve liberty and equality…and to improve the lives of people from many groups.
Core Curriculum Area(s): History, Language Arts

Materials Needed: books about heroes, drawing paper and colored markers

Think & Do Activity Description:

1. Introduce the word "hero." Ask children: "What does it mean to be a hero? Can anyone be a hero? Can kids be heroes?"

2. Read a story to them about a modern day hero. (See suggested books, below.)

3. Questions: What was the thing that this hero wanted to fix? How did the hero work to do it? Is it easy to be hero? Why/Why not?

4. Have children brainstorm about things in the world that we need to fix (homelessness, poverty, pollution, etc.). Then discuss what we could make better if we all tried. What are some of the ways we could make these changes happen?

5. Ask each child to think of one wish that would make the world a better place. Then ask them to each think of one thing that they will do to help make the wish come true.

6. Children will complete the phrase: My wish for a better world is…… What I will do is……. They will then illustrate their wish and what they will do to work toward it.

Suggested Reading	*Home Connections*	*Teacher Tips*
"Rosa Parks: My Story" by Rosa Parks and Jim Haskins", Martin's Big Words" by Doreen Rapport, "Sadako and the Thousand Paper Cranes" by Eleanor Coerr, "Happy Birthday Martin Luther King" by Jean Marzollo	Parents can talk with their child(ren) about someone they consider to be a hero. This might be someone famous or it might be a family member who did something difficult in order to make things better.	Help children understand there are little heroes and big heroes. Help them see that there are some heroes that are famous and there are everyday heroes that we may never hear about.