
Tumbletown Tales

Teacher's Guide

TVOntario



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This guide has been developed for use with the nine-program instructional series Tumbletown Tales, produced by TVOntario.

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Green Thumb Conundrum	887906	Keeping Up with Zeus	887916
Silo Road	887907	Chomp-etition	887917
Mix Master	887908	Tumbleweed Domestic Animal	887918
Chinchilla Fence	887909	Current Sea-Worthy	887919
		Pile Driver	887920

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Table of Contents

Introduction	4
Not-So-Fantastic Voyage	5
Play Rodent Ball	6
Wagons, Boats, and Automobiles	7
Room With a Choo!	8
Birthday Crate	9
Green Thumb Conundrum	10
Silo Road	11
Mix Maxter	12
Chinchilla Fence	13
Traffic Co-Op	14
Field of Seeds	15
The Even Littler Hobo	16
Trading Cages	17
A Seed by any Other Weight	18
Keeping Up with Zeus	19
Chomp-etition	20
Tumbleweed Domestic Animal	21
Current Sea-Worthy	22
Pile Driver	23

Introduction

In this entertaining series, an adorable hamster, Tumbleweed, is seen using mathematics in a positive way to solve problems. As he goes about day-to-day activities, Tumbleweed practices skills related to the big ideas in the mathematics curriculum for grades K to 4. The series of three-minute programs offers opportunities for students to discuss and further explore concepts such as capacity, perimeter, quantity, division, data analysis, and patterning.

The Not-So-Fantastic Voyage

Program description

Tumbleweed has a tough time on his vacation because he takes too many seeds along. He learns that he would have been better off if he had estimated first.

Program objectives

- to explore the benefits of using a benchmark to estimate

Vocabulary/Key words

- voyage
- estimate
- benchmark

Pre-viewing activities or questions

- Ask students to tell about a time when they went on a trip. Explain the meaning of the word “voyage”.
- Brainstorm things someone might pack if they were going on a trip.
- Show a student lunch bag. Ask, do you think this lunch bag would be large enough to hold all the lunches you would need for a 7-day trip? Why/Why not?
- Have students show with their hands “about” (i.e., approximately) how big the bag would need to be to hold enough lunches for 7 days.

While-viewing activities or questions

- What is Tumbleweed’s problem?
- Why is he unhappy with his trip?
- What did he learn at the end of his trip?
- How did thinking about the seeds he eats in a day help him to make a better estimate?

Post-viewing activities or questions

- Show students a container holding 30-50 small uniform items. (e.g., snap cubes, marshmallows). Have students guess how many items they think are in the container altogether. Pour out 10 of the items. Show the students what 10 looks like. Ask, if this is 10, then how many do you think are in the container? Encourage students to change their original estimates, if they wish. Tell students that looking at a smaller amount to estimate a larger amount is called “using a benchmark.” Count to check. Have students evaluate if they estimated too many or too few.
- Give individual students or pairs of students clear plastic bags filled with 50-60 small uniform items. Have students take out 10, then estimate the amount left in the bag. Check. Adjust the quantity of cubes in each bag, according to the level and needs of the students.
- Have students reach into a container of uniform items to try to grab a specific amount. e.g., try to grab 20, 30, and so on. Younger students might use a ten-frame to check the quantity they have grabbed.
- Show students a handful of popcorn kernels. Ask, do you think this many kernels will make enough popcorn for the whole class to share? Have students explain their thinking, then pop the corn to check.

Play Rodent Ball!!!

Program description

Tumbleweed uses what he knows about patterns to help his team win a game of Rodent Ball.

Program objectives

- identifying patterns in the environment
- using patterns to solve a problem

Vocabulary/Key words

- pattern
- repeat

Pre-viewing activities or questions

- Talk about the patterns that occur in the daily routines of your classroom. Make a chart about the patterns in your day – line up, sing “Oh Canada!”, have recess, etc.
- Ask students to talk about extra-curricular activities they do at home (e.g., play soccer, baseball, piano).
- Have students think about the patterns in their routines at home or in their extra-curricular activities.

While-viewing activities or questions

- What pattern did Tumbleweed discover?
- How did knowing the pattern help Tumbleweed’s team win the game?

Post-viewing activities or questions

- Create secret people patterns for students to uncover. Ask students to line up, creating a pattern based on items they are wearing, the color or length of their hair, etc. Have the class try to guess the pattern you’ve created.
- Have students work in small groups to make action patterns to share with the class. They might clap, snap, jump, snap,

and so on. Once the group has shared their pattern, the rest of the class tries to guess the rule and continue the pattern.

- Work co-operatively as a class to create a repeating action pattern. In the gym or another large space, organize the class in a circle. One student begins the action pattern, and the pattern is then continued one action at a time, taking turns going around the circle. See how long the class can keep the pattern going.
- Have students write about the patterns in their daily activities. Ask, have you ever used a pattern to solve a problem or help you remember something? Students might title their writing: “Patterns in my Life.”

Wagons, Boats, and Automobiles

Program description

Tumbleweed goes to the seed store to buy seeds. He buys too many to fit in his boat and his wagon. By the time he arrives home, he only has half of a half of the seeds he bought—which he figures out is one quarter.

Program objectives

- explore quantity
- explore capacity
- identify simple fractions (half and quarter)

Vocabulary/Key words

- half
- quarter

Pre-viewing activities or questions

- Prepare a collection of manipulatives that is about double the quantity that will fit into a chosen container. Ask, do you think I will be able to put all these “cubes” into this container? After students respond, begin filling the container. Once the container is full, ask: about how much of my collection fits into the container? Listen for students’ ability to identify the quantity as “about half.”

While-viewing activities or questions

- Why did Tumbleweed buy so many seeds?
- What is Tumbleweed’s problem?
- How much of the seeds fit into Tumbleweed’s boat?
- How much of the seeds fit into Tumbleweed’s wagon?
- What should Tumbleweed do the next time he needs to buy seeds?

Post-viewing activities or questions

- Give individual students or pairs of students about 100 snap cubes, centicubes, or buttons. Without counting, have students try to use a ruler or a pencil to separate the collection into two equal groups. Once they have split the pile, students should count to see how close to “half” they are. Ask, how will you know if you have divided the collection equally? (Both quantities will be the same.) Repeat a few times focusing on ‘Half’ and then have students try to separate each half into half, thereby making “quarters.” Ask, how will you know that you have quarters? (There will be 4 equal groups).
- Give individual students or pairs of students 24 snap cubes or other small counters. Have students work with the cubes to show all the ways they could group the cubes. Ask: which group shows half? Which group shows quarters?
- Give students muffin tins with 6 or 12 spaces. Give students 36 counters. Ask how they can place the counters into the muffin tin so that each section contains the same amount.
- Ask students to solve the following problem: you have an apple, a cookie, and a banana. You have 4 friends coming over to play. Draw a picture to show how you could share all the snacks fairly.

Room With a Choo!!

Program description

Tumbleweed decides to build a new room onto his castle. The ferry he hires needs to make more than one trip to take the bricks across the river. Tumbleweed tries to use his calculator to figure out how many trips will be needed, but forgets to book a trip for the “remainder.”

Program objectives

- solving problems involving division
- using a calculator to solve problems

Vocabulary/Key words

- equal
- divide
- remainder
- calculator

Pre-viewing activities or questions

- Show students an ice cube tray. Say: “I want to make 30 ice cubes. I need to make them all at the same time.” Ask, how many trays will I need? Give students time to draw pictures or use items to help them solve the problem. When they are finished, discuss why you would need an extra tray and why you would have some spaces not filled. Talk about the extra spaces as being “leftovers” or remainders.

While-viewing activities or questions

- Why is Tumbleweed buying bricks?
- Why can't Tumbleweed take all the bricks at the same time?
- How did Tumbleweed figure out how many trips he would need? What mistake did he make?
- Why is there a big a hole in the wall of Tumbleweed's new room?

- How does an artist create the impression that an object is smaller or bigger?

Post-viewing activities or questions

- Give each student or pair of students 50 counters to represent the people in the following problem. Imagine that there is mini-van available to take 50 people to a show. The driver can only take 6 passengers at a time. How many trips will the driver need to take to get everyone to the show? Have students share their strategies and solutions to the problem. If students are ready, have them use their calculator to model the problem situation. Discuss the results of dividing 50 by 6. Ask, why is there a decimal?
- Ask students to describe how they would share 9 balloons among 4 friends. Have them write about how they decided to share the balloons and why.
- Ask students to show how they would share 84 cents with 4 friends. Have students draw a picture of the coins they would give each person.
- Tell students that you have 20 stuffed toys at home that you want to pack up and put into storage. You only have three boxes. Have students draw pictures to show different ways you might pack up the toys.

Birthday Crate

Program Description

It's Tumbleweed's birthday. Tumbleweed knows he has birthday supplies in his basement, but can't remember which crate they are in. Eventually, Tumbleweed realizes he can use a map to help him locate his supplies.

Program objectives

- describing location on a grid

Vocabulary/Key words

- location
- map
- grid
- down, up, over

Pre-viewing activities or questions

- Have students brainstorm and list supplies that might be needed to have a birthday party. Once students have created their lists, work as a class or in small groups to sort the items on the lists. The categories developed might include: decorations, treats, presents, etc.

While-viewing activities or questions

- Why is Tumbleweed having such a hard time finding his party supplies?
- How did using the map help Tumbleweed solve his problem?

Post-viewing activities or questions

- Using graphing chart paper, work with students to create a map of the classroom or a storage area in your classroom. Once the map is complete, students play "guess what I am thinking." Students give clues, using directional language, to describe items/places on the classroom map. Other students try to guess the

location or item being described.

- Play a barrier game using pattern blocks. Students play in partners. Using a book as a barrier between the players, students take turns secretly placing pattern blocks on a placemat. Once they have placed 3-5 blocks, they give clues to their partner, describing the location of each block. The partner tries to replicate the placements. Once all the blocks have been placed, students remove the barrier to see how close they got.
- Play "make my picture." Students give clues to secret locations on a 10 x 10 grid. Before playing, students lay out bingo chips to make a design or picture on the grid. They write clues using language such as "up", "down", "over", "left", "right", and so on, to describe the placement of each chip. Partners try to follow each other's clues to make their pictures. As an adaptation, students might use a 100-chart. In this version, students can give the "start" number and then give clues from this point as to where to place each bingo chip.

Green Thumb Conundrum

Program description

Tumbleweed decides that his castle needs decorating. He goes to the flower store to get flowers for his garden. The store is all sold out of the colors he wants. He is left with the problem of finding a pattern that will work with the color of flowers the store has left.

Program objectives

- creating and extending repeating patterns
- identifying patterns in the environment

Vocabulary/Key Words

- pattern
- repeat

Pre-viewing activities or questions

- Take students on a “pattern walk” or look around the classroom for places where they see patterns. Make a list of patterns found. Post the pattern list in the classroom and encourage students to add to the list every time they discover a new pattern.
- Ask students if they can think about a time when they have seen patterns used as a decoration (e.g., bulletin board, garden, wallpaper, tile, floors).

While-viewing activities or questions

- Why did Tumbleweed go to the flower store?
- What problem does he have?
- How does Tumbleweed solve his flower problem?

Post-viewing activities or questions

- Have students make their own patterned flower gardens on strips of brown construction paper. Students may use

small squares of colored tissue paper to make their flowers. Flowers can easily be made by wrapping the squares of tissue paper around the end of a pencil. Tissue paper buds are dipped in glue and then added to the pattern strip. Encourage students to make patterns with at least 3 different colors of flowers. Use their garden strips to decorate the classroom.

- Present the following problem: I have 24 snap cubes. 12 are red, 8 are blue, and 4 are yellow. How can I snap these cubes together to make a pattern?
- Make repeating name patterns on grids. Give students a 5 x 5 grid. Have students write their names over and over again, starting at the left corner and writing to the end of the first row, wrapping around to the next row, when necessary. Once the grids are filled in, have students describe the patterns they see: vertically, horizontally, and diagonally. Repeat using a 6 x 6 grid. Discuss how changing the size of the grid changes the pattern.

Silo Road

Program description

Tumbleweed needs to find a silo large enough to hold his seeds. He is sure that the tallest tower will hold the most. He finds out that tall, thin towers can hold fewer seeds than some shorter, wider towers.

Program objectives

- exploring capacity

Vocabulary/Key words

- tall
- short
- narrow/skinny
- wide/fat
- capacity

Pre-viewing activities or questions

- Fill two containers with snap cubes or other small items. Be sure that one container is short and fat, the other— tall and thin. Ask students to predict which container is holding more cubes. Count the cubes in each container. Discuss how the shape of the container affects the amount it holds.

While-viewing activities or questions

- Why does Tumbleweed need a new silo?
- Why does Tumbleweed keep buying taller and taller silos?
- What does Tumbleweed learn about the size and shape of the different silos?

Post-viewing activities or questions

- Give pairs of students two 8.5 x 11 inch pieces of paper. Have them roll one of their papers widthwise and tape to make a short cylinder. Then have the students roll the other paper lengthwise and tape

to make a tall cylinder. Ask students which cylinder they think would hold the most cubes. After students have discussed their predictions, give them a collection of cubes to check. Discuss what students find out.

- Place a number of containers at a water or sand center. (If an area for sand or water is not available, the same activity could be done using a large tub of rice.) Have students use a smaller container as a measuring tool. Encourage students to predict which of the containers they think will hold the most. Have students check and then place the containers in order from “holds the most” to “holds the least.”
- Play, “which container will they fill?” Before the activity, fill a container with snap cubes, buttons, or other small items. Empty the items out onto a paper plate and then display the items, the original container, and 3 or 4 ‘other’ containers for students to consider. Ask students to try to guess which container the items fill. Check to see if they have predicted correctly.

Mix Master

Program description

Tumbleweed goes to the grocery store in search of the ultimate seed mix. He is looking for a seed mix with lots of sunflower seeds and very few green things. He uses pictographs on the back of seed packages to help him make his decision.

Program objectives

- reading and interpreting pictographs

Vocabulary/Key words

- graph
- more
- less
- ambivalent

Pre-viewing activities or questions

- Show students a clear container/jar holding a mixed collection of colored snap cubes. Ask, do you think there are more red or more blue cubes? More green or more yellow cubes? Which color do you think there are the most of? Empty the container and work with students to snap together all the colors that are the same. Lay out the cubes in lines (concrete graph). Discuss what the graph shows.

While-viewing activities or questions

- Why is Tumbleweed looking for a new seed mix?
- What do the graphs on the back of the seed mix boxes tell about the seed mix?
- What would be the perfect seed mix for Tumbleweed?

Post-viewing activities or questions

- Investigate the contents of cereal boxes or candy boxes (e.g., Fruit Loops, M & M's,

Smarties). Have students take a handful or use individual packages to sort by color or flavor. Students may make individual graphs showing the contents of their sample. Later, the class data can be gathered to create one large graph showing the contents of the product investigated. Discuss what the graph tells them about the product.

- Have students imagine their “ultimate cereal.” Have students think of a name for their cereal and then make a pictograph that shows what the contents of the cereal would be.
- Have students create surveys about favorite foods. Each student thinks of a survey question: What is your favorite cereal? What is your favourite flavor of ice cream? What is your favourite color of Smartie or M&M? Ask students to survey their friends and make a pictograph or a bar graph to display the results.

De' Fence

Program description

Tumbleweed decides to build a fence around his castle. First he measures around his castle in paces. When he gets to the 'Fence Store' he finds out that fences aren't sold in paces. He finds out that one fence piece is 10 paces long and then uses a calculator to help him figure out how many fence pieces he needs for the perimeter of his castle.

Program objectives

- using non-standard measurement
- solving problems while measuring
- using a calculator to help solve problems involving large numbers

Vocabulary/Key words

- perimeter
- paces
- division

Pre-viewing activities or questions

- Ask students if they know the word that is used to describe the distance around something? (perimeter)
- Have students consider how many square tiles, paper clips, or toothpicks would fit around the edge (perimeter) of their desk. Ask the students to check their predictions.

While-viewing activities or questions

- Why does Tumbleweed want to build a fence?
- Why does Tumbleweed walk/pace around his castle?
- What problem does Tumbleweed have when he gets to the store?
- How does Tumbleweed solve the problem with fence pieces?

Post-viewing activities or questions

- Ask students to predict how many paces it is from the classroom to the school office, library, or gym. Send students off to check. They may keep track of their paces using a calculator. Press 1+1, then =, =, = for each step. Once students have the amount, ask them to think about how many "tens" there are in the number of steps they took. Ask, how could you use your calculator to figure it out? Repeat the walk to check their calculations. This time, have students walk with a partner. Every ten steps, one partner passes a marker (popsicle stick) to their partner. At the end of the walk, count the markers by 10.
- Use a Trundle Wheel to measure the perimeter of the schoolyard. Have students consider how many of the fence pieces in the Tumbleweed story would be needed to build a fence around the schoolyard.
- Model measuring the top of a bookshelf or other flat surface, using a single unit from a base 10 set. Once the units have been laid out ask, how many 10 rods will it take to measure the same distance? Have students write about their answer, explaining how they figured it out.
- Have students use string to compare the distance around different body parts. Ask questions such as: "Do you think the distance around your wrist is longer than, shorter than, or the same as, the distance around your ankle?" "Do you think the distance around your waist is the same, longer than, or shorter than, the distance around your head?"

Traffic Co-op

Program description

Tumbleweed gets caught in traffic. He asks the mayor to fix the traffic problem and as the transportation commissioner he conducts a survey of possible solutions.

Program objectives

- collect first hand data by counting objects and conducting surveys

Vocabulary/Key words

- survey
- option
- chart

Pre-viewing activities or questions

- Ask student if they have ever had to wait in a long line at the water fountain
- Ask students if they could think of a way to find out what most people think is a good solution to this problem
- Introduce the idea of conducting a survey to find out what students think is the best solution

While-viewing activities or questions

- What is Tumbleweed's problem?
- How is he going to solve his problem?
- What does Tumbleweed mean when he says "That is not an option"?

Post-viewing Activities or Questions

- Ask the students how they get to school. Create a tally chart on the board recording the results. Ask students to determine from the chart the most used form of transportation to school and the least used method of transportation.
- As a whole class have students discuss a problem they are facing at the school (eg. Sharing toys at recess, wait lines at

the water fountain). Write a list of possible solutions on a chart and survey the class for which one they think is the best solution. Try to implement their idea.

- Give each student sheet with a tally chart with three ice cream flavours listed. Ask students what they think the question should be. Demonstrate how they would use the chart when collecting the data. Ask the class what they think they should do if someone chooses an option that is not on their tally chart. Should they add it on or discount the data? Have students collect the data and share the results with the class.

Field of Seeds

Program description

Tumbleweed wonders how many seeds he has in his field. He starts to count by ones but gets disorganized and lost. Until he hears a voice that tells him to count by two's and three's in columns or groups.

Program objectives

- counting by 2's, 5's and 10's in a variety of ways

Vocabulary\Key words

- count
- column
- grouped

Pre-viewing activities or questions

- Ask students how they would count how many feet there were in the class
- How would they count how many fingers.
- Have students think about an easier way to count them other than one by one.

While-viewing questions

- What does tumbleweed mean when he says they are grouped by three?
- What is hamburger's solution when tumbleweed could not count the wheat by 13?

Post-viewing activities or questions

- Have students sit in a circle as a whole class and ask them to share with a neighbour how they would count the number of shoes in the class. Once they have shared with their partner they can share their ideas with the whole class. Ask each student to count the number of shoes by two and tell their partner how

many they got.

- Repeat the same instructions for counting the number of fingers in the class.
- Using multilink cubes students can put their cubes into links of five. Ask them to count how many cubes they have. Ask them if they found a faster way to count the cubes. Count the columns by five's
- Repeat the activity with the multilink cubes by placing the two rows of fives together to make rows of ten and have the student now count them by rows of ten.

The Even Littler Hobo

Program description

Tumbleweed gets directions to a part from Rabbit who tells him to take 50 paces and turn left. Tumbleweed gets lost because his paces are much smaller than rabbit's and he turns too early.

Program objectives

- using mathematical language to identify and describe numbers to 50 in real life situations

Vocabulary\Key words

- bigger than
- smaller than

Pre-viewing activities or questions

- Ask the students if anyone has ever been lost. Have them share some of their stories
- Ask students what might have prevented them from getting lost.
- Ask the students if they were told to take 10 steps and turn right would they end up in the same location as an adult?

While-viewing questions

- Why is Tumbleweed not sure where to turn?
- Why do you think Tumbleweed got lost?

Post-viewing activities or questions

- Play a mystery number game with the class. Tell the class you are thinking of a number bigger than 24 but smaller than 26. Have students pair up and try the game themselves taking turns choosing a number.
- Give directions to a hidden treasure in the classroom using teacher size paces. Have a student follow the directions.

When the student is not near the treasure ask the class what they think the problem is. Discuss longer than and shorter than paces. Adjust the directions and have the student try the directions again with child size steps.

- Students can measure out their own directions using their paces. Write them down and ask a friend to follow their directions and see if they end up where they should.

Trading Cages

Program description

Tumbleweed and his cousin Burpy trade cages and try to redecorate each others home. Tumbleweed had some difficulties in remembering what Burpy was likely and unlikely to appreciate.

Program objectives

- use mathematical language in informal discussions to describe probability

Vocabulary\Key words

- likely
- unlikely
- probability

Pre-viewing activities or questions

- Discuss the meaning of likely and unlikely
- Ask the students questions such as, is it like or unlikely to snow in summer?

While-viewing questions

- Why is Tumbleweed changing his mind about decorating Burpy's cage?
- What does he mean when he says it is unlikely Burpy will like his room black?

Post-viewing activities or questions

- Have several jars of 2 different coloured cubes. Each jar will have different numbers of each colour. Ask the students if it is likely that they would pick out one colour over another. In small groups have the students pick out cubes one at a time, recording on paper which cube they picked out. After 25 picks they can write a sentence stating which colour was likely to be chosen and which colour was unlikely to be chosen.

- Have the students make spinners and colour $\frac{3}{4}$ of the spinner blue and $\frac{1}{4}$ red. Have the students make a tally of how many times the spinner lands on blue and how many on red. The students should then write a statement of the probability of the spinner landing on red or on blue.

A Seed by any Other Weight

Program description

Tumbleweed wins a win your weight in seeds contest. Tumbleweed gets on the balance scale and compares his weight to different kinds of seeds.

Program objectives

- estimate, measure and record the mass of objects using non standard units and compare the measures

Vocabulary\Key Words

- heavier
- lighter
- equal
- estimate

Pre-viewing activities or questions

- Have a bowl of popcorn and a bowl of kernels. Ask students to estimate which one is heavier. Test the estimate. Ask the class how many kernels should be taken out to make their weight the same.

While-viewing questions

- Have the students estimate whether or not the seed will equal Tumbleweed's weight. Have them explain why they think only one avocado seed was enough to tip the scales but they needed a whole bag of chokes-verts

Post-viewing activities or questions

- In small groups students each take a standard object determined by the teacher, such as a box of crayons, and using a balance scale compare the mass of the crayons with other classroom objects. On a chart the students should first estimate whether they think the object will be heavier than or lighter than the box of

crayons. Then they should test their estimate and record their findings

- Using a balance scale students can first estimate and record how many multilink cubes they think will equal the mass of various classroom objects. Then they can measure using the scales and record their findings.

Keeping up with Zeus

Program description

Tumbleweed wants to make a sculpture so he can out do his neighbour. He makes a trip to the art store for supplies and asks for several 2D shapes. He goes back to make his sculpture and it does not work because the shapes are flat. He goes back to the store again and this time he learns he needs 3D shapes.

Program objectives

- create structures using concrete materials and drawings
- observe and construct a given 3D model
- identify 3D figures using concrete materials

Vocabulary\Key Words

- sphere
- cube
- cone
- triangle
- square
- circle
- three dimensional

Pre-viewing activities or questions

- Show students 2D shapes and ask them to name the shapes. Then show them 3D shapes and ask the students to share with a partner how they think the shapes are different. Share the ideas with the class, name the 3D shapes and write the vocabulary on the board.

While-viewing questions

- After Tumbleweed gets the 2D shapes ask the students if they think he will be able to make a good sculpture out of the shapes.
- Ask the students how they think Tumbleweed would be able to improve

his sculpture after his first attempt.

Post-viewing activities or questions

- Collect baskets of 3D shapes. Have the students build their own sculptures out the shapes. Then the students can draw and label the shapes and give their sculptures a title. Have a gallery walk about when they are done.
- The teacher can make a sculpture out of 3D shapes. The students can then be challenged to recreate the sculpture with their own shapes. The students can then try to build their own sculpture and challenge another student to copy their sculpture, taking turns back and forth.

Chomp-etition

Program description

Zeus beats Tumbleweed's seed eating record. Tumbleweed sets out to reclaim his title but he needs to beat Zeus' record by eight seeds. To figure out if he has won by eight seeds Tumbleweed suggests they count up eight from Zeus' score of 75 instead of subtracting 75 from 83.

Program objectives

- pose and solve simple number problems orally

Vocabulary\Key Words

- subtract
- difference
- counting forward

Pre-viewing activities or question

- Ask students to think of a trick or way that they use to add two numbers together. Then share that trick with a partner. Ask the students to share with the class any of their strategies. Repeat the same questions but asking about subtraction.

While-viewing questions

- When the animals are trying to find a way to calculate if Tumbleweed won by eight seeds stop the video and ask the students if they can think of a way to solve the problem. Have them discuss in partners or small groups and then share their ideas with the class.

Post-viewing activities or questions

- Discuss how Tumbleweed solved the problem. Write the problem out on a chart paper and show in pictures how they solved the problem.

- Model with the class several examples of counting up using counters, starting with one digit subtraction questions and then moving on to two digit by two digit questions.
- Provide each student with counters and several subtraction questions to answer using the counting up strategy.

Tumbleweed: Domestic Animal

Program description

Tumbleweed tries to roll out cookie dough and make as many cookie cuts out of the cookie dough as he can. He discovers if slides the cutter and turns the shape upside down he can fit more in.

Program objectives

- describe an object in relation to another using positional language
- demonstrate transformations such as flips, slides and turns using concrete materials

Vocabulary\Key words

- flip
- slide
- turn

Pre-viewing activities or questions

- Ask the students to think of a way that Tumbleweed could fit more cookies on to the rolled out cookie dough. Have them share their ideas with a partner and then have them share with the class.

Post-viewing activities or questions

- Give the students triangle pattern blocks and a piece of paper with a rectangle on it. Ask them to figure out how many of their shape they can fit onto the rectangle. Have the students draw or trace the triangles onto the paper to show how they arranged them on the paper. After this activity ask the students to discuss how they accomplished their task. Asking them how they moved their shaped to fit using language such as flip, slid and turn.
- Give students another paper with the same rectangle and give them an irregular shape (perhaps cut out of card

stock). Ask the students to use their knowledge of flips, slides and turns to place as many of their shape on their rectangle as they can. Have them share with their group how many they were able to place and some of the strategies they used to be able to fit more into the space.

Current Sea-Worthy

Program description

Tumbleweed gets a flyer for a seed sale and heads to town by some seeds. He runs into a problem when his boat sinks under the weight of his 99 pennies. Hamburger comes to the rescue suggesting that he take a dollar coin that is worth 100 cents instead of his 99 pennies. Tumbleweed heads to town and gets his seeds, unfortunately his boat sinks again under the weight of the crate of seeds.

Program objectives

- represent a given value of coins up to 10 cents using concrete materials

Vocabulary\Key Words

- dollar
- penny
- dime
- cent
- nickel
- worth
- change

Pre-viewing activities or questions

- Ask students if they could share a story of when they went to buy something and had a lot of coins.
- Show students all of the coins and ask if they can name and place a value to each coin.

While-viewing questions

- After Tumbleweed's boat sinks as the students if they have any ideas that might help Tumbleweed solve his problem of having too many coins in his boat.

Post-viewing activities or questions

- Have the student sort piles of coins in small groups. Naming the coins as a group and then writing their names on a chart paper.
- Discuss with the class the value of each coin and demonstrate how 5 pennies is the equivalent value to 1 nickel. Give several examples to the students using pennies nickels and dimes.
- Using coins have students independently make 3 equivalent values of 10 cents. Have them draw their answers on a piece of paper.
- In pairs challenge the students to make 27 cents with the fewest number of coins.

Pile Driver

Program description

Tumbleweed decides his house is a mess and he needs to organize his seeds. He sorts his seeds into two piles but discovers he has seeds left over that don't fit into either category. Tumbleweed tries to solve the problem by finding many different ways to sort his seeds.

Program objectives

- recognize similarities and differences in a variety of attributes

Vocabulary\Key Words

- organize
- large
- small
- dark
- light
- sort

Pre-viewing activities or questions

- Ask the students in the class if any one of them has ever had a messy room.
- Ask them to share with a partner some of the ways they might organize their room. When they are finished discussing with their partner have them share with the class

While-viewing questions

- Ask the students if they can think of other ways Tumbleweed might organize his seeds when he has a pile of sunflower seeds left over. Ask them what they might do with the seeds that could go in both piles.

Post-viewing activities or questions

- Create a large venn diagram on the floor of the classroom out of tape or skipping ropes. Have the students brainstorm ways of sorting themselves, such as eye colour or by types of shoes. Seat the students in a circle on the floor around the venn diagram and using one of the students ideas sort them according to the attributes. Start with a simple either/or attribute such as male and female and then move to a more complicated attribute where you will have some student who will fit into the middle of the diagram
- In small groups students can work on sorting objects gathered by the teacher into their own venn diagram on paper and drawing each object into its appropriate place on the paper, not forgetting to label each circle