

**Sonoran Desert**  
**3rd grade**  
**Anita M. McBride**

*Lesson One*

**Objectives:**

1. Language: Students will use details of a story to demonstrate sequential order and retell the story in their own words with 90% accuracy.
2. Science: Students will identify story elements to build background about the concept of interdependence in the life cycle of a plant with 90% accuracy. (The life cycle steps as presented in the book will be listed.)
3. Learning strategy: Students will use prior knowledge of story elements to assist their learning about life cycles.

**Standards:**

1. Reading: Identify facts and the main idea, sequence events, define and differentiate characters, and determine an author's purpose in a range of traditional and contemporary literature
2. Writing: Gather, organize and accurately, clearly and sequentially report information gained from personal observations and experiences such as science experiments, field trips and classroom visitors
3. All Listening and Speaking at the Foundations level
4. Science: Identify and record changes and patterns of changes in a familiar system
  - a. Describe relationships among parts of a familiar system (e.g., a bicycle, a park, a clock)
  - b. Describe and explain the interrelationship of populations, resources and environments
  - c. Describe and explain cause-and-effect relationships in living systems
  - d. Trace the life cycles of various organisms

**Assessment:**

Given the steps in the life cycle of the Saguaro cactus, students will choose one event in the story to draw a picture about. Students will then write captions for their pictures, labeling the life cycle step shown. In cooperative groups, students will then place their pictures in order and retell the story in their own words. These pictures could be used to make a classroom book.

Procedure:

1. Use the book Cactus Hotel, Author: Brenda Z. Guiberson, Illustrator: Megan Lloyd, Publisher: Henry Holt and Company, Inc, 1991
2. Read the book to the students while they follow along in their copies. This could be done the day before this lesson.
3. Write 1 to 3 questions per page or 2 pages of the story. This lesson may take 2 days to complete because of the length of this book.
4. Read the questions to the students for each page or 2 pages.
5. Have the students read the story 1 or 2 pages at a time reading for the answers to the questions.
6. The students orally answer the questions in their own words and then read the sentences to support their answer.

Questions for the book:

Page 1: How many seeds are in the saguaro fruit?

Pages 2-3: Who comes along to eat the fruit?

Where does the saguaro seed drop? (What does this animal do for the saguaro plant by eating the fruit?)

Pages 4-5: When does the seed sprout?

Pages 6-7: What protects the saguaro from the sun?

How old is the cactus when it is four inches high?

What does the cactus look like after a rainstorm?

Pages 8-9: How tall is the cactus when it is 25 years old?

What animal comes along and eats some of the cactus?

Pages 10-11: How old is the saguaro when it is 10 feet tall?

What color are the flowers?

What comes to eat the nectar?

Pages 12-13: What decides to stay at the cactus?

Pages 14-15: Where does the woodpecker make his home?

What does the woodpecker do for the cactus?

Pages 16-17: How tall is the cactus after sixty years?

What animal moves into the old woodpecker hole?

Pages 18-19: After one hundred fifty years how tall is the cactus and how much does it weigh?

Pages 20-21: Name some of the animals that live in the cactus hotel.

Pages 22-23: How old is the cactus when it crashes to the sandy floor?

Pages 24-25: What animals move into the toppled hotel?

#### Notes:

This is the third lesson that would be done with this book. The first lesson would be the introduction of vocabulary words that the students might not have had exposure to in their other readings. The second lesson would be a teacher read aloud of the story and discussion of any words that the students do not understand that was not introduced in the first lesson. After the above lesson is done, the students would be ask to read the story to a partner. A review time and a ten question vocabulary/comprehension test given.

#### **Modifications:**

Make copies of the pages and give them to the learning disabled student along with a highlighter. Have the student mark with the highlighter the answers to the questions. This way the students will not have to remember where the "proof" sentence is located. The students could select only one of the questions per page to answer instead of answering all of the questions. Another student could read the pages to the learning disabilities student if needed. All of these changes to the lesson will allow the learning disabilities student to be successful with the lesson.

### *Lesson Two*

#### **Objectives:**

1. Language: Students will use details of a story to demonstrate sequential order with 90% accuracy.
2. Science: Students will use story elements to background about the life cycle steps of the Saguaro cactus with 80% accuracy.
3. Social Studies: Students will use the details of the story to create a timeline of the Saguaro cactus with 80% accuracy. Students will then create a timeline of their own live.
4. Learning strategy: Students will use prior knowledge of their own live to create a timeline.

#### **Standards:**

1. Reading:
  - a. Restate information from a reading selection.
  - b. Sequence a series of events from a reading selection.

2. Writing: Use correct spelling, punctuation, capitalization, grammar and word usage, and good penmanship to complete effectively a variety of writing tasks
3. Science: Trace the life cycles of various organisms
4. ESL: Students will use appropriate learning strategies to construct and apply academic knowledge.
5. Social Studies: The students will be studying their own family history.

**Assessment:**

Given the steps in the life cycle of the Saguaro cactus, in cooperative groups, students will finish a timeline of the life cycle of the Saguaro cactus. Individually the students will construct a timeline of their life, including important dates. Students will use family members as a resource for their timeline. In order to receive the full 10 points for this assignment the students must include all of the required items and one of the optional items. Each item will be worth two points each.

**Materials:**

Paper

Rulers

Pencils

Colored pencils or crayons if the students wished to draw pictures on their timeline

**Procedure:**

1. Teacher and students will read the book, Cactus Hotel, Author: Brenda Z Guiberson, Illustrator: Megan Lloyd, Publisher: Henry Holt and Company, Inc., 1991. This book is used as background information for the timeline on the Saguaro cactus.
2. On a large sheet of paper, the chalkboard, or the overhead projector the teacher will model how to start a timeline using the life cycle of the Saguaro cactus. The students will copy the information on to their own paper. The students will continue (in groups of five) working of the timeline as a cooperative group.
3. Example of information that would be on the timeline: the age of the plant when it is two inches tall, when the woodpecker builds it's first home in the cactus, and the age of the plant when it dies.
4. After the students have finished the timeline for the Saguaro cactus, they will group share the information they put on their timeline with the rest of the class.
5. The teacher will model for the students what the students need to put on their personal timeline. The students will have one week to gather information from their families and construct their timeline.
6. The students will individually share their personal timeline with the class.

**Required information on the timeline:**

1. Day born
2. Month started kindergarten and where
3. The birthday that they remember most (if for religious reasons the student does not celebrate birthdays this can be replaced with a special day)
4. An important historical event that has happened since they were born (example: since I was born the first man walked on the moon)

**Other information that might be included:**

1. A special Christmas.
2. A special day with a grandparent.
3. A special religious ceremony that involved them if they were in a wedding or if one of their parents got married.
4. Any other information that their relatives can provide them.

**Modifications:**

The homework (personal timeline) would need a very detailed list of instructions and ideas for the timeline for the parents to use so that they could help the student. Additional time to complete this assignment might be needed.

**Extension:**

The students could pick one event on their timeline and write a short personal narrative to be shared with the class.

### *Lesson Three*

**Objectives:**

Language: Students will make words from a list of letters and then make the mystery word using all of the letters given. This lesson is designed to help students be successful on the AIMS and SAT 9 tests when completing test questions written in this format, The boy ran \_ ast.

The students will be able to fill-in the missing letter to words with 90% accuracy.

**Standards:**

Writing: Word recognition and decoding strategies.

**Procedure:**

1. This lesson is based on the Making Words lesson from the Four Blocks book. The word that I have selected is saguaro. This was the cactus in the book Cactus Hotel (By: Brenda Z. Guiberson, Illustrator: Megan Lloyd, Publisher: Henry Holt and Company, Inc., 1991)
2. Using the Franklin Spelling Ace enter the letters from the word saguaro. The spelling ace will then tell you the different words that can be made from the letters in the word saguaro.
3. Decide which of the words that can be made from these letters will be used for the lesson. The words that I selected are; rug, rag, sag, gas, ago, oar, our, sour, soar, and sugar.
4. The students are given a chart (the chart I use is from the Four Blocks book, Making Words) to put the scrambled letters on and also the selected words. The scrambled letters are put on the board or overhead. The students write the letters on their papers. The students are given all of the letters in the mystery word. The letters are scrambled. Letters for this lesson are: O-A-A-U-R-S-G
5. The procedure for giving the students the words is:
  - a. The students will write the given words on their charts as the teacher gives the words. The teacher should have a student come to the board or the overhead and write the word that was given for the other students to copy. (I have made an overhead copy of the making words chart that the students can fill in as I give the words.)
  - b. Tell the students what the first word that they are going to make is.

Teacher says the following:

- c. Make the word RUG
- d. Change the U in RUG to A to make RAG
- e. Change the R in RAG to S to make SAG
- f. Rearrange the letter in SAG to make GAS
- g. Change the S in GAS to O, rearrange the letters to make AGO
- h. Change the G in AGO to R, rearrange the letters to make OAR
- i. Change the A in OAR to U to make OUR
- j. Add S to OUR to make SOUR

- k. Change the U in SOUR to A to make SOAR
  - l. Change the O in SOAR to U and add G to make SUGAR
  - m. Give the students time to make the mystery word. The first student that makes the word gets to share it with the class.
6. After this activity has been modeled with the students give them another word (letters scrambled) to work on in groups.

This activity can be done with any word from any lesson. The students can also be given the letters to the mystery word and allowed to work in groups making and recording as many words from the mystery word letters as they can. The final word to make is the mystery word.

**Modifications:**

This lesson needs very little modification for the special education student because the words are written for the students to copy onto their charts. The special education student can also be paired with another student during both whole class and group work.

*Lesson Four*

**Objectives:**

1. Language: Students will research other desert plants and make a student book with 10 facts about desert plants with 80% accuracy..
2. Science: Students will record the life cycle of their plant with 100% accuracy.

**Standards:**

Writing - W-F2: Use correct spelling, punctuation, capitalization, grammar and word usage, and good penmanship to complete effectively a variety of writing tasks a. Spell high frequency words correctly b. Punctuate endings of sentences c. Capitalize sentence beginnings and proper nouns d. Use standard, age-appropriate grammar and word usage (e.g., basic subject-verb agreement, complete simple sentences, appropriate verb tense, regular plurals) e. Write legibly

W-F5: Locate, acknowledge and use several sources to write an informational report in their own words. a. use resources (e.g., video tapes, magazines, informational books, reference materials, interviews, guest speakers, Internet) and report information in their own words b. Write an introductory statement, followed by details to support the main idea Assessment: After reading the book, Cactus Hotel, Brenda Z. Guiberson, Henry Holt and Company, Inc., 1991, the students (in cooperative groups) will research another desert plant and create a class book to be shared with the rest of the students.

Procedure:

1. The teacher will read the book Cactus Hotel (Author: Brenda Z. Guiberson, Illustrator: Megan Lloyd, Publisher: Henry Holt and Company, Inc., 1991) to the students as an example of the information they need to look for when doing their research for their book.
2. The students will work in groups of five.
3. Each group will be assigned a different plant to research.
4. Plants of the Sonoran Desert: Organ Pipe Cactus, Chain-fruit Cholla, Palo Verde, Prickly-pear Cactus, Ocotillo, Creosote, Mexican Poppy, Brittlebush, Teddy-bear Cholla, Owl's-clover, Cardon, and Soaptree Yucca.
5. Each group will be given a plant to research. Each student in the group will be responsible for bring two facts about their plant back to the group for the book.
6. The students put all of the information together and the teacher proofreads the information.

7. Once the teacher has approved the information, the students make the finished book by writing the information and drawing pictures to match the information in the final book.
8. This can be done with the animals of the Sonoran Desert also.

Notes:

There are several different materials that student made books can be made from. These books can be made from construction paper (white or a light color), or for smaller books, card stock can be used. Both of these may have to be laminated for durability. Large sheets of butcher paper can be folded and stapled together to make student books. The butcher paper books do not have to be laminated.

**Modifications:**

By having the students work in groups the learning disabilities student can contribute to the group and not have to do the entire book alone. The learning disabilities student can be responsible for only one fact about their group's plant. A detailed explanation of the assignment should be sent home (English and Spanish) so that the parents can provide help to the student.

*Lesson Five*

**Objectives:**

Science: Students will observe a sponge in water and record their observations with 100% accuracy. Students will predict which will weigh more, a dry sponge or a water soaked sponge with 100% accuracy. Using scales the students will measure and record the weight of the sponge with 100% accuracy. Students will use prior knowledge to compare what happens to the sponge in water to what happens to a cactus when it rains.

**Standards:**

1. Writing: Gather, organize and accurately, clearly and sequentially report information gained from personal observations and experiences such as science experiments, field trips and classroom visitors.
  - a. Record observations (e.g., logs, lists, graphs, charts, tables, illustrations)
2. Science:
  - a. Predict the results of an experiment
  - b. Conduct an experiment and record data
  - c. Identify adaptations of plants that allow them to live in specific environments

**Assessment:**

The students will record the results of their experiment. The students will share their results with the class.

**Materials:**

Sponge, Shallow dish or pan, Cup of water  
Chart for recording results  
Scale and weights

**Procedure:**

1. Use the book Cactus Hotel Author: Brenda Z. Guiberson, Illustrator: Megan Lloyd, Publisher: Henry Holt and Company, Inc., 1991 as background information for the experiment.
2. Brainstorm with the students the characteristics of desert plants. Write these characteristics on the overhead for the students to use as they record the results of their experiment.
3. Before giving the students the materials for the experiment go over the directions stopping during the directions to ask questions to check for understanding.
4. Divide the students into groups of four or five.

5. Give each group one sponge, one shallow dish or pan, one cup of water, one scale with weights, and the chart to record results.
6. The students will first predict which they think will weigh more, the dry sponge or the wet sponge.
7. The students will then weigh the sponge dry and record the weight.
8. The students will place the sponge on the dish.
9. The students will add the one cup of water to the dish.
10. The students will record their observations.
11. The students will weigh the wet sponge after it has been in the water for ten minutes.
12. The results will be shared with the entire class and all of the results will be recorded on individual charts.  
All students will fill out a chart.
13. The groups will brainstorm what they think happened and then share their ideas with the class.

**Modifications**

The students will be working in groups. This provides support to students. The spaces of the chart could be highlighted so the student will know where to put the information. The students can copy from one of their group members or from the overhead when these results are shared.

Notes:

1. The students will need experience using the scales and weights.
2. The chart should include the following information: place for prediction answer, group numbers, weight dry, and weight wet

Directions:

1. Weigh the sponge dry.
2. Place sponge in the dish or the pan
3. Wait 10 minutes and then weigh the sponge wet
4. Record your results beside your group number on the chart

Example of chart

Group Number	Prediction (Circle one)	Weight dry	Weight wet
1	dry or wet		
2	dry or wet		
3	dry or wet		
4	dry or wet		
5	dry or wet		

*Lesson Six*

**Objectives:**

Math: Students will use prior knowledge of probability to make predictions as to how many time each cactus will come up when a cube is thrown 30 times.

**Standards:**

1. Math: Predict and measure the likelihood of events and recognize that the results of an experiment may not match predicted outcomes
  - a. Collect and record data from a probability experiment
  - b. Organize (e.g., sorting, sequencing, tallying) data from a probability experiment
  - c. Name the possible outcomes of the probability experiment

- d. Predict the most likely or least likely outcome in probability experiments
- e. Compare the outcome of the experiment to the predictions

**Assessment:**

In cooperative groups, students will use cubes with cacti names on the faces to conduct their own probability experiment. The students will make predictions and record their results.

Materials:

Wooden cubes

Procedure:

1. Review probability with the students.
2. Read the book Cactus Hotel to the students.
3. Review the directions before handing out the materials.
4. Give each student a cube with these six cacti names on them: Ocotillo, Prickly-pear, Cholla, Saguaro, Organ Pipe, and Cardon. This cube will be used for the first experiment. A second cube is used that has Saguaro on two faces and Cardon left off.
5. Give each student a copy of the directions, predictions chart, and the probability recording chart.
6. The students will conduct the experiment in their groups. They will record the results and share them with the rest of the class.
7. Students will compare their prediction to the actual results of the experiment.
8. The students will conduct a second experiment using the second cube. They will record the results and share them with the rest of the class.
9. The students will compare the results of the first and the second experiment.
10. In their groups they will discuss what they think caused the different results. The groups will share their ideas with the rest of the class.

**Modifications:**

1. The students will have the support of their group.
2. Different colored highlighters can be used to mark the chart.

Notes:

Wooden math cubes can be used for this probability activity.

If cubes are not available the names of the cacti can be written on the pieces of paper and put into a small paper bag to be drawn out.

Example of directions, prediction sheet, and chart:

Directions:

1. Predict how many times that you think each cacti will come up.
2. Write that number on the line by the cactus' name.
3. After all predictions are made throw the cube 30 times and record a tally mark by each name as it comes up.
4. Each student will throw their cube 6 times.
5. Add up the tally marks and record the results.
6. Using the second cube repeat the activity and record the results.

Prediction chart:

Organ Pipe Comes up \_\_\_\_\_ times  
Cholla Comes up \_\_\_\_\_ times  
Saguaro Comes up \_\_\_\_\_ times  
Ocotillo Comes up \_\_\_\_\_ times  
Cardon Comes up \_\_\_\_\_ times  
Prickly-pear Comes up \_\_\_\_\_ times

Results chart:

Cactus Name	Tally Marks	Total
Organ Pipe		
Cholla		
Saguaro		
Ocotillo		
Cardon		
Prickly-pear		