



# COACH'S GUIDE

## SCIENCE



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# Welcome!

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Thank you for your participation in the PBS Kids Project. As a coach, you are playing a vital role in the successful implementation of this project in early childhood classrooms. This ten-week curriculum is designed to build young children's early science foundations through active viewing of research-based videos, interactive computer games, and hands-on early literacy activities. Our goal as a project is to provide the highest quality experience possible for children participating in this program. As a coach your role is to help teachers to implement all aspects of the program to the best of their ability through ongoing support, guidance, modeling and coaching. The television episodes and segments, computer games, and hands-on activities that you will help early childhood educators to facilitate will build four fundamental areas that are essential to early science development:

## **SCIENCE CONTENT**

- Children explore science content through hands-on investigations that are easily observable with the five senses. Although the content is new, children are likely to have had some prior experiences related it.

## **SCIENCE VOCABULARY**

- Children are exposed to vocabulary words related to science content, such as transformation and decay, and to science skills, such as observation.

## **SCIENCE SKILLS**

- Children observe using their senses. They record their observations through drawing and chart survey information. Children also have opportunities to make and monitor predictions.

## **SCIENTIFIC THINKING**

- Children share their observations and predictions with peers, compare beliefs and observations with classmates, and play games that test their memory.

Using your knowledge of early education and developmentally appropriate practices, you will provide key support to the early childhood teachers participating in the project. Your role may vary across the centers that you work with, but you can expect to:

- Train and orient preschool teachers to the project
- Model appropriate practices
- Provide teachers with necessary supports to successfully implement the project
- Assist teachers in planning and preparation
- Serve as a resource and project liaison
- Participate in project activities and engage children in discussion
- Answer questions from educators and parents about the program

The job of a coach is individualized and often spontaneous. You will assess the needs of teachers on an individual basis and apply your knowledge and experience to develop a unique plan to assist them. This guide will familiarize you with the project curriculum and help you prepare for some possible situations that you may encounter in your individual classrooms.

# Materials Checklist

In addition to this Coach's Guide, you should also receive the following materials. If you are missing materials, please contact your Coach Experience Director.

## COACH'S MATERIALS

- ✓ Teacher's Guide
- ✓ Episode DVDs
- ✓ Focused Viewing DVDs
- ✓ Game DVDs
- ✓ Teacher Logs

## Each classroom should receive:

- |                                    |                                      |
|------------------------------------|--------------------------------------|
| ✓ Teacher's Guide                  | ✓ Sand paper                         |
| ✓ Episode DVDs                     | ✓ Sand                               |
| ✓ Focused Viewing DVDs             | ✓ Potting soil                       |
| ✓ Games DVD                        | ✓ Magnifying glasses                 |
| ✓ 3 Picture cards                  | ✓ Assorted shape manipulatives       |
| ✓ Survey chart                     | ✓ Knife to cut fruit and pumpkins    |
| ✓ Colored tiles                    | ✓ Paper plates                       |
| ✓ Science journals (one per child) | ✓ Paper bowls                        |
| ✓ Construction paper               | ✓ 4 Plastic pitchers / measuring cup |
| ✓ Assorted art paper               | ✓ Plastic spoons                     |
| ✓ School glue                      | ✓ Plastic cups                       |
| ✓ Craft sticks                     | ✓ 4 potato mashers                   |
| ✓ Crayon                           | ✓ 2 ice cube trays                   |
| ✓ Magic markers                    | ✓ 2 wooden spoons                    |
| ✓ Permanent marker                 | ✓ Sandwich bags                      |
| ✓ Colored pencils                  | ✓ Large plastic container with lid   |
| ✓ Paint brushes                    | ✓ 2 plastic tubs                     |
| ✓ Playdough                        | ✓ Cash allowance for grocery items   |
| ✓ Pipe cleaners                    |                                      |
| ✓ Wiggly eyes                      |                                      |
| ✓ Jingle bells                     |                                      |

# Calendar

JANUARY										
	Monday		Tuesday		Wednesday		Thursday		Friday	
						1		2		
5		6		7		8		9		
12		13		14	Coach Training (NYC)				16	
19		20	Pre-testing (through Feb. 6)				22	Coach Training (California)		
26	Teacher Orientation (Week 1)									

FEBRUARY									
	Monday		Tuesday		Wednesday		Thursday		Friday
2	Teacher Orientation (Week 2)							6	Pre-testing (ends)
9	Teacher Orientation (Week 3)								
16	Implementation (Week 1)								
23	Implementation (Week 2)								

MARCH									
	Monday		Tuesday		Wednesday		Thursday		Friday
2	Implementation (Week 3)								
9	Implementation (Week 4)								
16	Implementation (Week 5)								
23	Implementation (Week 6)								
30	Implementation (Week 7)								

APRIL									
	Monday		Tuesday		Wednesday		Thursday		Friday
6	Implementation (Week 8)								
13	Implementation (Week 9)								
20	Implementation (Week 10)								
27	Post-testing (through May 15)								

# Weekly Tasks

## Coach Training

JANUARY 16 — NYC

JANUARY 23 — CALIFORNIA

You will:

1. Attend training provided by EDC/SRI.
2. Review all materials and media.
3. Receive schedule of first and second teacher orientation visits.
4. Make sure you have back-up copies of DVDs and print materials for classrooms that are missing implementation items.

### WEEK 1

## Teacher Orientation

(JANUARY 26-30)

You will:

1. Conduct initial informal observation of classrooms (no more than 5) and conduct one-on-one, hands-on, 2-hour orientation with teacher. (Training will cover Week 1 activities and review Weeks 2 through 5.)
2. Encourage teachers to review all other materials, including DVDs, books and hands-on support materials.
3. Confirm second orientation visit.
4. Schedule first implementation visit (which may happen during the first or second week of the implementation phase) giving priority to sites that you feel may have difficulties with implementation.
5. Confirm teacher's phone number and email address. Identify a good time to have weekly telephone check-ins.

### WEEK 2

## Teacher Orientation

(FEBRUARY 2-6)

You will:

1. Conduct initial informal observation and 2-hour orientation with remaining classrooms (for coaches with more than 5 classrooms).
2. Schedule first implementation visit (which may happen during the first or second week of the implementation phase) giving priority to sites that you feel may have difficulties with implementation.
3. Confirm teacher's phone number and email address. Identify a good time to have weekly telephone check-ins.
4. Begin conducting second orientation with classrooms that were visited in previous week. (This training covers Implementation of Weeks 6 through 10.)

### WEEK 3

## Teacher Orientation

(FEBRUARY 9-13)

You will:

1. Complete second orientation with remaining classrooms. (This training covers the implementation of Weeks 6 through 10.)
2. Confirm initial implementation visits with classrooms.



**WEEK 1****Implementation****(FEBRUARY 16-20)**

You will complete up to five classroom observations this week:

1. Conduct the initial classroom implementation visits to co-facilitate the activity planned for that day.
2. Review how the activity went, discuss possible ways to strengthen implementation, and review upcoming activities for the current and following weeks using the Teacher's Guide.
3. If needed, schedule a follow-up implementation visit. This visit should occur on a different day of the week, so you can view a different set of activities. Schedule the visit as soon as possible, but you should not plan ahead of time on visiting a classroom more than once a week; some sites may need extra visits, but that will become clear after your visit. You will need to schedule a follow-up visit if:
  - a. You were unable to see a video-based activity; and/or
  - b. It is clear that the teacher is struggling with implementation and requires additional immediate support. In this case, notify your Coach Experience Director of your concerns.
4. If a classroom teaching team isn't struggling and you were able to observe a video-based activity, that classroom is a lower priority for visits. Follow up with the teacher once you have scheduled your high priority sites for the next week (or next two weeks if you have many struggling sites) to schedule a visit on a different day of the week than you have observed this week.
5. Conduct telephone check-ins with the classrooms that you did not visit.

**WEEK 2****Implementation****(FEBRUARY 23-27)**

You will:

1. Complete up to five classroom observations this week.
2. Complete the initial classroom implementation visits for the remaining classrooms not visited in previous week to co-facilitate an activity planned for that day.
3. Review how the activity went, discuss possible ways to strengthen implementation, and review upcoming activities for the current and following week using the Teacher's Guide.
4. Complete a second visit to as many of your struggling classrooms or classrooms in which you did not observe a video-based activity as you can.
5. If needed, schedule a follow-up implementation visit. This visit should occur on a different day of the week so you can view a different set of activities and should take place as soon as possible. You will need to schedule a follow-up visit if:
  - a. You were unable to see a video-based activity; and/or
  - b. It is clear that the teacher is struggling with implementation and requires additional immediate support. In this case, notify your Coach Experience Director of your concerns.
6. If a classroom teaching team isn't struggling and you observed a video-based activity, that classroom is a lower priority for visits. Schedule your high priority sites for the next week (or two weeks for many struggling sites) before scheduling a lower priority followup visit (on a weekday different than when you have already observed).
7. Conduct telephone check-ins with classrooms you will not visit this week.

# Weekly Tasks

## WEEK 3

### Implementation

(MARCH 2-6)

You will:

1. Complete up to five classroom observations this week.
2. Complete visits to co-facilitate video viewing in classrooms you did not observe a video-based activity during Weeks 1 or 2.
3. Review how the activity went, discuss possible ways to strengthen implementation, and review upcoming activities for the current and following week using the Teacher's Guide.
4. For this week's remaining visits, focus on sites that were struggling in Weeks 1 & 2 and need an additional visit. This means you may be visiting some sites for the second or third time since the implementation began to coach and debrief. If needed, schedule a follow-up implementation visit. You will need to schedule a follow-up visit if:
  - a. A teacher requests additional observation and support; and/or
  - b. It is clear that the teacher is struggling with implementation and requires additional immediate support. In this case, notify your Coach Experience Director of your concerns.
5. If you feel your classrooms are succeeding, you should still visit one site per day to observe, encourage, offer feedback, and answer questions. Visit these classrooms on a different day than you have previously to observe different activities and media use.
6. Conduct telephone check-ins with the classrooms you do not visit this week.

## WEEKS 4-10

### Implementation

(MARCH 9 – APRIL 24)

You will:

1. Complete up to five classroom observations these weeks.
2. Continue to focus on classrooms that are struggling. Your basic plan is to visit a classroom once a week and up to eight times during the study. You may need to visit some struggling sites more often; consult with your Experience Director to determine if this is necessary.
3. Observe and/or co-facilitate on these visits. Review how the activity went, discuss possible ways to strengthen implementation, and review upcoming activities for current and following weeks using the Teacher's Guide.
4. If you feel your sites are succeeding, you should still visit one site per day to observe, encourage, offer feedback, and answer questions. Visit these classrooms on different days of the week to observe different activities and media use.
5. Conduct telephone check-ins with the classrooms you do not visit during the week.
6. Complete Teacher Logs and mail to Drew Jacoby-Senghor after Weeks 4 and 10.

# Sample Schedule (Weeks 1-4)

	Monday	Tuesday	Wednesday	Thursday	Friday
Week 1	Initial visit to Classroom 1	Initial visit to Classroom 2	Initial visit to Classroom 3	Initial visit to Classroom 4	Initial visit to Classroom 5
Week 2	Initial visit to Classroom 6	Initial visit to Classroom 7	Return visit to Classroom 2 (struggling in week 1)	Return visit to Classroom 3 (no video in week 1)	Return visit to Classroom 1 (struggling in week 1)
Week 3	Return visit to Classroom 5 (no video in week 1)	Return visit to Classroom 6 (struggling in week 2)	Return visit to Classroom 4	Return visit to Classroom 2	Return visit to Classroom 3 (struggling in week 2)
Week 4	Return visit to Classroom 3 (struggling in week 3)	Return visit to Classroom 5 (struggling in week 3)	Return visit to Classroom 7	Return visit to Classroom 1	Return visit to Classroom 6 (struggling in week 3)

# Cheat Sheet

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Your role will vary to some extent from classroom to classroom depending on the amount of support the teaching teams require. In each classroom your role will include:

## Co-Facilitation and Modeling

During your initial implementation visit, you will co-facilitate the activity for the day with the teacher. This will give you an opportunity to assess their competence with the activity and if necessary, model the correct skills.

## Active Observation and Participation

Once teachers are confident and able to successfully facilitate an activity, your role will be to actively observe and participate in the activity.

## Preparation and Assisting in Planning

At the end of each visit, you should make sure the teacher is prepared for activities in the current and following week and assist them with planning if necessary. This can be accomplished by reviewing the Teacher's Guide and highlighting changes to the routines.

	Co-Facilitation and Modeling	Active Observation and Participation	Preparation and Assisting in Planning
Warm-up and Quick Review	<ul style="list-style-type: none"> <li>• Reading scripts with enthusiasm</li> <li>• Motivating and engaging students</li> <li>• Timing and pacing</li> <li>• Appropriate wait time for responses and additional prompts</li> </ul>	<ul style="list-style-type: none"> <li>• Actively participate with the children</li> <li>• Redirect and refocus children</li> </ul>	<ul style="list-style-type: none"> <li>• Review the episode</li> <li>• Review the script and needed materials</li> <li>• Discuss the learning objectives</li> </ul>
Episode Viewing	<ul style="list-style-type: none"> <li>• Stopping and Starting the episode</li> <li>• Keeping children actively engaged</li> <li>• Timing and pacing</li> <li>• Appropriate wait time for responses and additional prompts</li> </ul>	<ul style="list-style-type: none"> <li>• Actively participate with the children</li> <li>• Redirect and refocus children</li> </ul>	<ul style="list-style-type: none"> <li>• Review the script and needed materials</li> <li>• Discuss the learning objectives</li> </ul>
Hands-on Followup	<ul style="list-style-type: none"> <li>• Preparing activities ahead of time</li> <li>• Taking advantage of Teachable Moments</li> </ul>	<ul style="list-style-type: none"> <li>• Actively participate with the children</li> <li>• Redirect and refocus children</li> <li>• Circulate and take advantage of Teachable Moments</li> </ul>	<ul style="list-style-type: none"> <li>• Review directions and needed materials</li> <li>• Discuss learning objectives and Teachable Moments</li> </ul>
Focused Viewings	<ul style="list-style-type: none"> <li>• Keeping the children actively engaged</li> <li>• Stopping and starting the video at designated prompts</li> <li>• Timing and pacing</li> <li>• Appropriate wait time for responses and additional prompts</li> </ul>	<ul style="list-style-type: none"> <li>• Actively participate with the children</li> <li>• Redirect and refocus children</li> </ul>	<ul style="list-style-type: none"> <li>• Review the clips</li> <li>• Review directions and needed materials</li> <li>• Discuss the learning objectives</li> </ul>
Games	<ul style="list-style-type: none"> <li>• Setting up and introducing the games</li> <li>• Taking advantage of Teachable Moments</li> </ul>	<ul style="list-style-type: none"> <li>• Actively participate with the children</li> <li>• Redirect and refocus children</li> <li>• Circulate and take advantage of Teachable Moments</li> </ul>	<ul style="list-style-type: none"> <li>• Review the games</li> <li>• Discuss learning objectives and Teachable Moments</li> </ul>

# Sample Orientation

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## First Orientation (2 hours)

1. Walk through the Teacher's Guide
2. Demonstrate Week 1 Warm-up and Episode Viewing
3. Demonstrate set up of Hands-on Follow-up Activities (include Art activities for all ten weeks) and discuss ways of moving children to the centers and Teachable Moments
4. Invite teacher to practice Focused Viewing and discuss ways to keep the children engaged
5. Demonstrate the Pumpkin Investigation
6. Demonstrate Sid's Survey
7. Demonstrate Quick Review for Week 1
8. Preview Games and Teachable Moment prompts for Week 1
9. Review Week 2 in the Teacher's Guide
10. Co-facilitate Warm-up and Episode Viewing for Week 2 with teacher
11. Invite teacher to practice Focused Viewing and review ways to keep the children engaged
12. Demonstrate how to facilitate the Planting Seeds activity
13. Invite teacher to practice Sid's Survey
14. Preview Games and Teachable Moment prompts for Week 2
15. Demonstrate Quick Review
16. Invite teacher to practice Warm-up for Week 3 & 4
17. Invite teacher to practice Episode Viewing for Week 4
18. Demonstrate Freezing Fruit
19. Preview Sid's Survey, Games, Teachable Moment prompts and Quick Review for Week 4. Walk through Week 5 in the Teacher's Guide
20. Preview Games and Teachable Moment prompts

## Second Orientation (2 hours)

1. Invite teacher to practice Warm-up and Episode Viewing for Week 6
2. Review Hands-on Follow-up Activities, moving children and Teachable Moments
3. Demonstrate Making Applesauce
4. Preview Sid's Survey, Games, Teachable Moment prompts and Quick Review
5. Invite teachers to practice Focused Viewing for Week 7
6. Preview finding Frozen Fruit Activity
7. Preview Sid's Survey, Games, Teachable Moment prompts and Quick Review for Week 7
8. Invite teacher to practice Warm Up for Week 8
9. Demonstrate Magnification Observation
10. Preview Sid's Survey, Games, Teachable Moment prompts and Quick Review for Week 8
11. Walk through Weeks 9 and 10 of the Teacher's Guide
12. Preview Games and Teachable Moment prompts for Weeks 9 and 10
13. Answer questions and address concerns

# Scenarios

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The following scenarios present situations that may occur on days when you are (or are not) present in the classroom. As you read, consider the needs of the teaching teams and the kinds of supports they may require. Consider what type of support could be provided before, during and after each activity in scenarios 1 and 2.

## Scenario 1

It is 9:00am on Monday morning of week 5 in Mr. Tim and Ms. Anne's classroom. Mr. Tim has gathered the class for the morning circle and is introducing a new episode to the class. Before reading the Warm Up, he reads *Carrot Seed* aloud to the class and engages them in a discussion about planting seeds, caring for them and watching them grow.

At 9:15, Mr. Tim reads the Warm Up and starts the video. At the first stopping point, he pauses the video and has each child explain why they think Sid's shoes do not fit him anymore. At the next stopping point, he asks each child to name something that grows. Some of the children have started conversations amongst themselves and others are having difficulty sitting still. At 9:40, Mr. Tim resumes the video, but stops shortly after to encourage the children to compare and contrast the bean planting investigation in the episode to the events in *Carrot Seed*.

In the meantime, Ms. Anne is preparing the hands-on followup activities. She has set up a table with materials for sand collages and has placed a finished example in the middle of the table. She sets up another table with playdough, and a table with worksheets emphasizing matching baby animals to their full grown counterparts.

At 10:00, when the children finish viewing the episode, Mr. Tim assigns the children to an activity and directs them where to go. The children go to their assigned areas and begin to work independently and in small groups. As the children work, Ms. Anne and Mr. Tim use the time to refresh the bulletin boards and complete paperwork.



## Scenario 2

It is Monday of Week 3 in The Rainbow Room and Ms. Angela has just gathered the children on the rug for the Warm Up activity. She starts to read the Warm Up enthusiastically, then stops to walk across the room to pick up some of the bean plants that are sitting on the window sill. She shows the plants to the children and asks if anyone can remember the word that describes what happened to the seeds.

After completing the Warm Up, Ms. Angela locates the DVD for the day and turns on the TV and DVD player. When she presses the play button, nothing happens so she takes a few moments to make sure that it is plugged in and that it is on the correct channel. She tries again and asks her teaching partner, Mr. Ryan to help. When they are both unsuccessful, Ms. Angela calls the director. In the meantime, Mr. Ryan leads the class in songs and creative movement activities. Shortly after, the director comes and fixes the problem.

Ms. Angela starts the episode and stops to ask questions at all of the Pause points. When the episode ends, Mr. Ryan asks Ms. Angela what they are supposed to do next. They

both look at the Teacher's Guide and make a plan to set up the centers for hands-on follow-up activities. Ms. Angela sets up a table with materials for Sight Drawings and turns on the classroom computers. Mr. Ryan finds a sing-a-long DVD to keep the children occupied while he takes out the shape sets and sets up a table with playdough.

When the centers are ready, Mr. Ryan uses the classroom choice chart to help children decide where to go. As the children work, Mr. Ryan and Ms. Angela circulate and make positive comments about the behaviors they see. A pair of students playing Trash Stash at a computer are giggling as they click on items that they know are incorrect.

Nearby, another pair of children at a computer is fighting over the mouse. Ms. Angela reminds them to share and sets a timer to let them know when to trade places.

# Troubleshooting

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## Replacing materials

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I misplaced my Coach's Guide.  
One of my sites has missing and/or broken materials. How can I get replacements?

EDC and SRI will replace many of the materials for the project if they are missing or broken. However, many of the project materials are common to early childhood classrooms and centers. EDC and SRI cannot guarantee replacement of these common items. In such cases, coaches should encourage classrooms/centers to use what they already have on hand or suggest a practical replacement. Please consult the Materials Replacement List on page 19 for additional guidance.

## Activities and/or Project not implemented

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When I made my initial visit to one of my sites, the teacher told me that she had not implemented any of the components.

Make a note of this on the teacher log. Co-facilitate Week 1, Day 1 with the teacher, prepare and assist them with planning for activities for the current and following week. Encourage the teacher to continue implementation, schedule a follow-up visit and make frequent telephone calls to check-in.

One of my classrooms has not consistently given the children time for online games, second focused viewing, etc.

Make a note of this on the teacher log. Encourage the teacher to continue implementation as written in the Teacher's Guide, schedule a follow-up visit and make frequent telephone calls to check-in.

## Broken media equipment/technical difficulties

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The computer or DVD player in the classroom is not functioning and the classroom has not been able to implement components of the curriculum.

Unfortunately, EDC and SRI are unable to provide replacement media equipment. Make a note of this on the teacher log.

## Difficulties in Getting Along with a Teacher or Site Staff Member

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The teacher in one of my classes really doesn't like the program and has made it obvious that I am not welcome there.

Contact your Coach Experience Director immediately, and talk through the situation. There could be any number of reasons why a teacher is unhappy about the program. Our goal is to make the experience as positive as possible for all centers and to respond genuinely to teacher and staff concerns as they arise.

# Important Contacts

<b>COACH EXPERIENCE DIRECTOR</b>	<p>General experience questions about materials, curriculum, training and coaching issues, teacher logs, schedule, timesheets, assessments</p>	<p>NYC  <b>Eve Townsend</b>  <a href="mailto:etownsend@edc.org">etownsend@edc.org</a>            (800) 225-4276 or            (212) 807-4279</p> <p>California  <b>Amy Hafter</b>  <a href="mailto:ahafter@sri.com">ahafter@sri.com</a>            (650) 859-4566</p>
<b>EXPERIENCE COORDINATOR</b>	<p>Research questions about overall study and its assessments</p>	<p>NYC  <b>Lauren Bates</b>  <a href="mailto:lbates@edc.org">lbates@edc.org</a>            (800) 225-4276 or            (212) 807-4269</p> <p>California  <b>Carlin Llorente</b>  <a href="mailto:carlin.llorente@sri.com">carlin.llorente@sri.com</a>            (650) 859-2381</p>
<b>MAILINGS</b>	<p>Where to mail all teacher logs</p>	<p><b>Drew Jacoby-Senghor</b>            SRI International            333 Ravenswood Avenue            Menlo Park, CA 94025</p>

## Materials Replacement List

Contact the Experience Director to replace these materials:

- Coach Guide
- Teacher's Guide and/or DVDs
- Picture Cards
- Survey Chart and Graphing Tiles
- Science Journals
- Playdough
- Jingle Bells
- Sand
- Sand Paper
- Pipe Cleaners
- Wiggly Eyes
- Potting Soil
- Magnifying Glasses
- Potato Mashers
- Large Plastic Container with Lid
- Credit Card for Grocery Items

Suggest using materials that are already on hand in the classroom/center to replace these materials

- Construction Paper
- School Glue
- Crayons
- Colored Pencils
- Magic Markers
- Permanent Marker
- Knife to Cut Pumpkins
- Measuring Cup
- Paper Plates and Bowls
- Plastic Pitchers
- Wooden Spoons
- Sandwich bags
- Plastic Tubs

Suggest a practical substitute for these materials:

- Art Paper
- Craft sticks
- Paintbrushes

SCIENTIFIC  
INVESTIGATIONS  
REVEAL  
SUSCEPTIBLE  
CHANGE