Instructional Unit Session II: Paper Airplanes
Tutor’s Guide

GENERAL FRAMEWORK

Read, Reflect & Wonder → Investigate & Explore → Integrate the Arts → Engage Parents

References for Unit

SECTION 1
Read, Reflect & Wonder

Objectives
The child will:

- Explore STEM concept/design challenge: Make a complex airplane that can fly as far as possible and maintain flight with added weight
- Participate in Read Aloud
- Make and check story predictions with instructor support
- Sequence events in a story with instructor support
- Engage in SERVE and RETURN communications
- Explore questions and “wonderings”

Approximate Time
15 minutes

Materials Needed
The Great Paper Caper by Oliver Jeffers

Step by Step
1. Prepare for the Read Aloud – Before meeting with the child, read through the book The Great Paper Caper by Oliver Jeffers. Observe an example of a Read Aloud with this book.
Read Aloud: The Great Paper Caper
YouTube video: https://youtu.be/hr4vrhUWCZo
In this video an adult reads the story and a child elaborates on the text by pointing at pictures and explaining what the illustrations mean. The adult does not engage in SERVE and RETURN with the child. Use the example to notice how a child might react to the text and as a practice tool for how you might RETURN responses to the comments that the child makes in the video.

2. **Prepare for SERVE and RETURN interactions**- Prepare to pay attention to what the child is focused on when looking and the pictures and listening to you read and plan to return the child’s interest with encouragement and extension of vocabulary or topic. For example, if a child points to a specific picture, name it. This can be done seamlessly so that the read aloud continues. Here is an example from the 2nd video; the child says “This is how to make things from paper” in reference to the directions for making paper airplanes. You could respond, “Yes, these are the directions to make paper airplanes.” Child points to animal houses (“Those are houses where animals live.”) and you might follow-up by saying, “Yes those are animal houses or habitats.”

3. **Begin by introducing the book and concepts**- When meeting with the child, begin exploring the book.
   a. Show the child the cover of the book and say, “Let’s start our reading adventure. Here’s our book to share.”
   b. Read the title and the author’s name.
   c. Ask the child, “What do you think this book will be about?”
   d. Look at several pictures together.
   e. Ask the child, “What do you think will happen? Why?”

4. **Set a listening focus**- Direct the child to pay particular attention to an important aspect of the book. For example, “When we read this book, let’s notice and think about why the trees are so important to the animals.”

5. **Read and RETURN**- Begin reading the book. Don’t rush, but do keep the flow going. The child will be reading this book again in the expansion activities. Bring the book to life by adding in noises, reading with character voices; and/or using actions. And, when child does the same (SERVE), you RETURN by responding in an appropriate way. Reading time is optimal time for SERVE and RETURN communications. Notice what the child is paying attention to on the pages and return his interest by being responsive and naming the item or commenting on it. The RETURN is key to child engagement.

6. **Pause and Chat**- Periodically pause and chat about the book. You can ask a question and/or encourage the child to ask a question. You can use illustrations to clarify unknown words such as caper, alibis, investigations. Illustrations can also be used to generate questions and conversations such as, “Why do you think the animals are so worried about the tree branches?”

7. **Reflect and Wonder**- After you read, provide an opportunity for the child to reflect on what happened and wonder about it. For example, you can pause and look intently at the book,
maybe a specific page to show that you are thinking about it. You can say, “Hmm, that was interesting (funny, unexpected, etc.), what do you think?” Possible prompts for extending thinking and wondering more about the story include, “The bear was stealing the branches to make not-very-good paper airplanes for a contest. Have you ever made a paper airplane? How well did it fly?”

SECTION 2

Investigate & Explore

Objectives
The child will:
• Engage in a STEM investigation
• Make and check predictions
• Engage in SERVE and RETURN communications

Approximate Time
30 minutes

Materials Needed
- Reusable resources such as copy and printer paper, newspaper, and magazine pages.
- Small weights such as paper clips and brads.
- Paper and markers, crayons, or pencils.
- Connections such as tape and staples and staplers (optional)

Step by Step
1. Explain the investigation.
   a. Say, “We are going to experiment making paper airplanes.
   b. Look at the paper airplanes (in the book and online). “Let’s think about it first. How are paper airplanes made? What kind of paper do you think will work best? What shape will we use? Draw or sketch ideas.

2. Make a building plan.
   a. Review materials available. “Let’s take a look at the materials we’re going to use to build our paper airplane,” (copy paper, newspaper, magazine page). What do you want to try first? How will we make the paper airplane?”
   b. Student will draw ideas using the plain white paper and crayons. “Let’s draw our ideas.” “How will you build it so that when you add weight to it, it will still fly?”

3. Build the paper airplane. Allow student to build the airplane. Assist as needed. Remember, the investigation is not about getting it right. The investigation is about inquiry learning, trial and error.
4. **Fly the airplane.** Test it. “Does your airplane fly? If not, why do you think this happened?” What can you change to make it better? How far does your plane go? Does it fly the same distance each time?”

5. **If the airplane flies, explore/extend by adding weights to it.** “Let’s add some weight to the airplane to see if it still can fly. How many paper clips do you think you can add before the airplane sinks? Let’s find out. Does it matter where you add the weights?” Note the number of weights the paper airplane can handle. Talk about the prediction and actual number of weights and the distance the plane can fly.

6. **If the plane doesn’t fly, reflect and revise.** “Why do think the plane didn’t fly? What can we change to make the paper airplane fly? Let’s try a different design.”

7. **Explore by making more planes of different shapes.** If you have time, make more than one shape plane and repeat the investigation. Ask, “Which shape holds the most weight or flies the furthest? Why do you think that happened?”

   https://paperairplaneshq.com/paper-airplanes.html
   Paper Airplane HQ – directions for making a variety of paper airplanes.

8. **Make comparisons between the book and your investigation.** If time permits, go back to the book and discuss it more. “Is the airplane that you made good enough to win a paper airplane contest? If not, how could you improve it so it might win a contest? What if you made it smaller? Does it fly better inside or outside?

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**SECTION 3**

**Integrate the Arts**

**Objectives**
The child will:
- Sing a song
- Act out the song
- Restate the order of song events (working memory)

**Approximate Time**
10 minutes

**Materials Needed**
https://www.youtube.com/watch?v=ogvrjr0HEZqE
*The Airplane Song* by Laurie Berkner

**Step by Step**
1. **Tell the child** you are going to finish up with a song,
2. Show the child the video and/or sing the song for the child.
3. Sing the song together, performing the actions for each verse.


Jump all around
Spin all around
Gallup all around
Dance all around
Sit down

SECTION 4

The child will:
- Tell the parent/caretaker about the story read and the activity conducted with the tutor.
- Reread the story with the parent/caretaker.
- Repeat the investigation with the parent/caretaker.

The parent/caretaker will:
- Share similar stories and/or songs, especially those from their home country or language. (Funds of Knowledge)

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