FAST FORWORD®
LITERACY

MISSION CONTROL
Teacher Manual

Contents

Goals/Objectives

English Language Arts Standard(s)	Speaking & Listening: Ask and answer questions about key details in a text read aloud or information presented orally or through other media (comprehension)

Language/ Reading Skills	Students will be able to... • attend to details and plan an appropriate sequence of steps in order to carry out verbal instructions (following directions) • recognize and apply knowledge of words and word parts such as morphemes and phonemes (word structure and knowledge) • listen to and comprehend spoken language and derive meaning from oral texts (listening comprehension)

Cognitive Skills	Students will be able to... • hold verbal instructions in working memory while retrieving knowledge of colors and shapes from long-term memory (memory) • focus on specific information, sustain that focus, and ignore distractions while carrying out a task (attention) • rapidly interpret and integrate auditory information and access linguistic knowledge at the level of words and sentences (processing) • use word order to comprehend simple and complex instructions and organize a response that follows the specified sequence of actions (sequencing)

Social-Emotional/ Executive Function Skills	Students will be able to... • selectively focus and sustain attention to oral directions • inhibit impulsive responses • build verbal working memory for accurate and confident listening skills • manage their ability to process rapid, complex information presented orally

Icon Key

🔊 Audio	⬇ Download	🌐 English Learner	✅ Quick Check	⚙ Settings	▶ Video

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Exercise Screen

1 Replay
Repeats the directions to be followed.

2 Autoplay
Turns Autoplay on or off; when "on" each click of the Go button presents a series of three or more questions.

3 Help
Provides access to Help options:
• **How to** replays initial instructions.

4 Home
Returns the student to their assignments screen.

5 Go
Presents the directions (questions) or a series of Autoplay questions. When an Autoplay sequence is in progress, this counter shows how many questions remain in the sequence.

6 Answer Buttons
The tokens which must be clicked or moved according to the directions presented.

7 Time
Shows Time Worked / Time Scheduled for the exercise.

8 Points
Shows total points awarded across all of a day's sessions.
• Correct answers: 2 points for each correct answer.
• Autoplay bonus: double the usual points if all answers in an Autoplay set are completed correctly.

9 Level Progress
Displays the current level and percent complete of the level.

10 Current Streak
Shows the number of consecutive correct answers in the session. Resets to zero after an incorrect answer.

11 Highest Streak
Shows the highest number of consecutive correct answers in the session.

Task

In Mission Control students listen to directions and then follow them by selecting or manipulating one or more tokens (objects) based on color, shape, and/or size.

Content

Students progress through five speech processing levels. Within each speech processing level, students work through directions from one or more of the following categories:

Categories	Sample Directions
1 Object, 2 Properties (color & shape)	Touch the green circle.
1 Object, 3 Properties (size, color, & shape)	Touch the little green circle.
2 Objects, 2 Properties (color & shape)	Touch the white circle and the blue square.
2 Objects, 3 Properties (size, color, & shape)	Touch the little green circle and the big yellow square.
Inclusion/Exclusion	Except for the blue one, touch the circles.
Sequencing	Before touching the white circle, touch the blue square.
Spatial Relations	Put the white square beside the red circle.

Did you know?

Verbal working memory—the ability to retain ongoing information for comprehending instructional details and sequences—develops and increases over many years beginning in childhood and continuing during adolescence. Information may be stored in working memory for minutes, hours, or even days before being consolidated into long-term knowledge. It is related to other listening skills like focused and sustained attention, and requires self-control and other executive functions; when practiced it builds a host of related skills.

As students mature and exercise working memory, they develop strategies to enhance their working memory and learning skills. For example, while reading, working memory strategies enable students to link current information to information from prior sections of a text or to relevant classroom discussions. Working memory strategies are also used to enhance retention of story sequences and chronology. Finally, working memory strategies employed during reading of texts from varied academic disciplines like mathematics, science, and history enable the student to further develop study skills as well as integrate content from several subject areas.

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Progression

In Mission Control students progress through 5 levels. In the early levels, the exercise uses modified (processed) speech to present the directions. In the processed speech, the consonant sounds in each word have been lengthened and enhanced relative to the vowel sounds. As students move through the levels, the degree of speech processing decreases until, at level 5, the words are presented using natural speech.

The directions vary in complexity to make the task progressively more difficult within each processing level:

- Linguistically-simple/low-memory demand directions (for example, Touch the blue square.)
- Linguistically-simple/high-memory demand directions (for example, Touch the large blue square and the small red circle.)
- Linguistically-complex directions (for example, Before touching the white circle, touch the blue square.)

Mission Control adapts to the student's performance at each level, and provides targeted interventions if the student is struggling.

Acoustically Modified Speech

Have you ever worked with a student who had modifications for additional think time, extra wait time, or for teachers to speak more slowly? All of these modifications provide the student with extra time to make sense of information, also known as processing time. For students who struggle with processing speed, and for those learning a new language, slowing down the rate of speech and emphasizing specific sounds can be very beneficial to develop accurate phonological representations, while increasing comprehension.

Fast ForWord's acoustically modified speech technology (sometimes referred to as "glasses for the ears") slows and emphasizes speech sounds so that students can hear all sounds in a word. This technology can even stretch out sounds that are physically impossible for human speakers to stretch on their own.

"Why does everything sound so strange?"

Some speech sounds, such as the /b/ sound in the word "bat," have very fast transitional elements. When we say them aloud, these elements are easy to miss, but slowing them and emphasizing them (by presenting them at a higher volume) helps the brain to hear and respond to them more quickly.

The modified words and syllables in the Fast ForWord exercises may sound strange or mechanical to those who process sounds quickly. But for students who need a little extra time, the modified sounds and words will be easier to hear than natural speech. As students progress, the stretching and emphasis are reduced, pushing the brain to process at faster and faster rates until it can process natural speech.

▶ Why Does Everything Sound So Strange? (Student) in Student & Teacher Resources

▶ Why Fast ForWord Sounds the Way it Does (Teacher) in Student & Teacher Resources

Motivational Levels

Each time a student progresses through 20% of an exercise, they "level up" and the screen changes slightly. These motivational levels are not connected to specific processing levels or content.
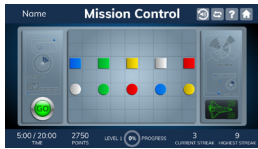
Level 1   Level 2   Level 3   Level 4   Level 5

Targeted Practice

This exercise uses built-in, responsive technology to detect when a student is struggling and administer targeted, inline instruction—right when the student needs it—without any external resources or assistance required. This helps reduce frustration as it quickly gets the student back on track, so they can continue making progress.

One type of intervention, the Vocabulary Teaching intervention, teaches students the vocabulary that is needed to perform a task by showing them a picture or animation that illustrates a concept, and then naming the word for that concept.

Let's go over the words you need to know for this task. You will see a picture of the word, and hear its name. If you want to hear the word again, click the REPLAY button.

Yellow

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Facilitate and Encourage

Introduce

Engage

To introduce the exercise to your students, say, Listening and following oral directions is an important skill. If you aren't actively listening, you may miss important information. We are going to do an activity which requires you to carefully listen to my directions. I will only say each direction once and it is your job to follow it. Are there any questions? (pause) Ok, let's begin.

Have the class draw an object as you give an oral description.

1. Use a simple object like a snowman, pencil, stick person, etc.
2. Do not identify the object by name; just describe the shapes they need to draw so that they can create the object step by step.
3. Have students share their drawings to see how close they are to the directions you gave.
4. Repeat the activity, but have students give oral directions to their peers instead of you.
5. Discuss other situations when it is important to listen carefully.

Demo

1. Say: Today, we're going to practice listening to direction and then following the instructions to carry out the actions. Together, we'll work on an exercise called Mission Control. I'll get us started, and then I'd like for you to try.

2. Project the "Introduction – English or Spanish demo" for Mission Control.

3. Follow along with the demo, which explains how the exercise works.
   • Correct answer: a "ding" sound effect plays, the answer is highlighted, and the word appears below the picture.
   • Incorrect answer: a "thunk" sound effect plays, the correct answer is highlighted with the word below, and the incorrect answers are dimmed.

4. Demo the keyboard shortcut:
   • Go button = Space bar

Direct students to log in and work individually on the Mission Control Demo for approximately 10 minutes. This time period mimics the timing of the exercise once it's assigned. Debrief with students to ensure they understand the task and objective of the exercise. Ask, What did you notice? Have students share anything that they have questions about.

Mission Control includes instructional audio for the exercise introduction and instructions. By default, these are presented in English. You can, however, select Spanish instructions for all, some, or individual students on the Manage page in mySciLEARN.

Monitor Student Progress

Review Mission Control reports regularly to monitor student progress. Use the data to determine which students are succeeding and which students might be struggling to make progress.

| **Where to look...** | **What to look for... what it means** |

PROGRESS: Elements II Exercise Progress - Mission Control

The colored line shows student progress and their percent complete. Each dot indicates a day the student worked on the exercise.
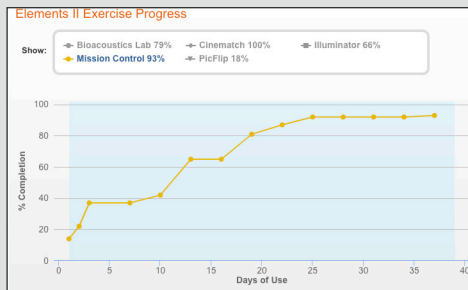
Is the line going up?
The student is completing content accurately and making progress.

Is the line flat across several dots?
The student may be struggling and you need to find out why.

Are there long lapses between dots?
The student may be skipping this exercise.

USAGE: Usage Details - Schedule

Do you see half-filled gray circles?
The student is working on this exercise, but not meeting the scheduled time. Make sure that they have time to complete their daily schedule. If fatigue is an issue, taking breaks is okay.

Do you see red circles?
The student is skipping this exercise. Provide support to help them re-engage.

USAGE: Usage Details - Minutes/Questions

Are many days highlighted in red?
The student is not meeting their daily schedule. Check the Schedule tab in this report to investigate further.

Is the student answering fewer questions than usual?
They may be distracted or losing focus. In comparison to their previous activity, a low number of trials to minutes may indicate the student is not applying themselves to the task.

Is the student answering more questions than usual?
They may be rushing. In comparison to their previous activity, a high number of trials to minutes may indicate the student is trying to amass points, or to progress more quickly, but rushing can result in mistakes. Ask them to turn Autoplay off. Remind them that making progress depends on accuracy, not speed.

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Where to look...

PROGRESS: Progress Details - Mission Control Progress

Mission Control Progress

✅ Complete, advancement criteria met

▮▮ In progress

▮▮▮ Not started

▮▮ Advancement criteria not met*

*If the student doesn't achieve a high enough percentage of correct answers in a level, they will repeat the language structures that challenge them. If the student is close to meeting advancement criteria, simply explaining this to the student can often result in more focused attention on the repeated level. If a student has to repeat a level several times, they may need more support.

▼ Mission Control ❓ ✔   19

	Progress ❓	Correct ❓	Questions ❓
Processing Level 1	✅	95%	20
Processing Level 2	▮▮	88%	40
	▮▮	70%	10
	✅	90%	10
Processing Level 3	✅	98%	40
Processing Level 4	▮▮	80%	20
	▮▮	70%	10

Correct
To make progress, students must achieve about 90% correct on each level.

Questions
The number varies depending on the level, and the student's performance on previous levels. If a level must be repeated, the student may only be required to repeat a subset of the questions.

Processing Level 1: 20

Processing Level 2: 40

Processing Level 3: 40 - 60

Processing Level 4: 20 - 60

Natural Speech: 60

PROGRESS: Errors - Mission Control

Content that the student is struggling with the most is highlighted in red.

▼ Mission Control

	Errors	Errors / Questions
Inclusion/Exclusion: Along with	27%	4 / 15
Example: *Along with the red square, touch the blue square.*		
Inclusion/Exclusion: Redirection	13%	2 / 15
Example: *Touch the yellow circle - No! - the red square.*		
Inclusion/Exclusion: Instead of	**67%**	**10 / 15**
Example: *Instead of the blue circle, touch the red square.*		

What to look for... what it means

Are there red bars under Progress?
When the student doesn't achieve a high enough percentage of correct answers, they will repeat a level (or at least those groups of questions with which they were struggling). Check how close the student is to meeting the advancement criteria. Often, simply explaining this to the student can result in more focused attention on the repeated level. If a student has to repeat a level several times, they may need more support.

Is the percent correct above 80%?
The student is close to the criterion for progressing (90% correct). Encourage them to avoid mistakes by slowing down, thinking about each question, and using the Replay button.

Is the percent correct well below 80%?
The student may be struggling with one or more questions. Go to the Errors section of this report to determine where the student needs additional support.

For a repeated level, did the number of questions decrease?
The student has mastered some questions at this level and is making progress.

For a repeated level, did the number of questions stay the same?
The student has not mastered additional questions. If their percent correct increases, they are learning from their mistakes and may just need more practice. Remind them to listen to and observe the corrective feedback to better understand why their answer was wrong before moving on to the next question.

Are specific word groups highlighted in red?
Consider providing the student with instruction on the specific vocabulary with which they are struggling.

The "Adjust Instruction/Intervene" section in this teacher manual provides suggestions for how to support students who might be struggling with Mission Control.

⬇ Elements II Progress Monitoring Chart in Student & Teacher Resources

Facilitate and Encourage

Adjust Instruction/Intervene

Differentiation Activities

Differentiating instruction requires continually striving to know and to respond to each student's needs in order to maximize learning. Use the data in Mission Control reports to adjust instruction to meet each student's needs and respond to variance among learners. The activities below are suggestions to support students who might be struggling to make progress.

✅ **Does the student understand the exercise goal/task?**

Observe the student as they work through the exercise demo to determine where their understanding may be breaking down.

✅ **Is the student able to repeat the directions back to you?**

Building memory and attention skills is important for this exercise. Ask the student to repeat the sentence or question back to you. If they are having difficulty remembering, here are some games to help build memory and focused attention:

- Give your student a three letter word to spell out loud. Then ask them to spell it out loud but backwards. See if they can spell four or even five letter words backwards!

- If the student can't spell yet, play a following directions game like Simon Says.

Both of these games can help the student practice using their memory and attention skills while having fun, which can increase motivation and improve their progress in this exercise.

✅ **Does the student use any memory strategies?**

Ask the student how they remember the directions. Do they repeat the directions to themselves? Do they look to see where the board pieces are located?

Memory strategies are useful ways to build working memory which is important for reading and learning. Teach your student a memory strategy like hovering their cursor or finger over the first shape/color they hear while they wait to hear the second direction.

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✅ **Does the student have difficulty correctly identifying colors?**

If the student has color vision deficiencies, provide feedback based on the nature of their issue.

- If the student is completely color blind and unable to differentiate between red and green or blue and yellow, they will need to skip this exercise.
- If their color blindness is less severe, using a visual aid cheat sheet with the names of the colors written under each color may help them to more quickly identify the colors in the exercise.

✅ **Does the student understand sequence words like "before" and "after"?**

Look at the Errors section in the student's Progress Report to see if they are struggling with particular sequence words. Try these strategies as needed.

- Use a whiteboard to show the student how the words "before" and "after" work when giving directions.
- Play a following directions game like Simon Says using only sequence words in your directions.

✅ **Does the student have trouble maintaining focus for the duration of the directions?**

Have the student take a short break between questions, which can help them maintain focus while listening. The student should:

1. Turn off Autoplay.
2. Answer a question.
3. Look up and count four ceiling tiles.
4. Continue to the next question.

Facilitate and Encourage

Adjust Instruction/Intervene

Student Resources

You may decide to use any or all of these monitoring sheets with your students:

Elements II Streaks & Completion Chart in <u>Student & Teacher Resources</u>

Explain to students that accuracy is the key to moving through the content in Fast ForWord. Because streaks record the number of correct answers in a row, this chart can help students self-monitor for accuracy. After they complete their exercises for each day, have students record their highest streaks and percent complete in each exercise, then challenge them to exceed those numbers tomorrow. Students will need one copy every 5 days.

Elements II Completion Chart in <u>Student & Teacher Resources</u>

Students can self-monitor their progress in each Elements II exercise by filling in the bar each day with their actual completed percentage. This provides students with an overall view of how much content they've completed compared to how much they have left to do. Students will need one copy.

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