

### **Learning about Frogs in a Second Grade Classroom**

Mr. Sanjay's second graders are about to begin a unit on the life cycle of frogs. He wants his students to understand cycles in nature and animal habitats. He also wants them to develop skills of scientific observation and collaboration, and, as always, he wants them to work toward becoming independent learners who can manage their own learning. During the unit, students research frogs and create a project sharing what they have learned.

Mr. Sanjay has a diverse group of second graders in his class. He has five students who are identified as having different levels of learning difficulties, one gifted student, and two students who are nonnative language speakers. All of these students spend some time outside of the classroom working with teachers who give them special assistance. Mr. Sanjay works closely with these teachers to meet the needs of these students as well as the needs of all of his students.

### **Preparing for the Unit**

To prepare for this unit, Mr. Sanjay first collects a variety of print materials about frogs at different reading levels. From his experience with his students and previous assessments, he knows that Rani, a student with moderate learning difficulties, is still reading at a kindergarten level, and that Suhas, a gifted student, can read at a fifth-grade level or higher, especially if he is interested in the topic. Therefore, Mr. Sanjay knows he needs to have books and magazines at different levels so that all of his students can participate fully in the project. He has also bookmarked several Web sites at different levels of difficulty and one Web site in Russian for his students.

Mr. Sanjay expects his students to prepare for a new unit by looking over the self-direction goals they set at the beginning of the year and thinking about how they are progressing. For example, Rani, a student with moderate learning difficulties, has had a consistent goal of remembering to have her materials ready when it is time to work. She also wants to work on elaborating her ideas more when she writes. Dipak, who has mild learning disabilities, knows that he often rushes through his work and is careless. His long-term goal is to take his time and check through his work before he turns it in. Mr. Sanjay encourages Dipak to discuss his work with a peer before he considers it finished, a strategy he asks all his students to use.

### **Introducing the Unit**

When Mr. Sanjay introduces the unit, he asks the students to help him fill out a Know-Wonder-Learn (K-W-L) chart to determine the students' level of knowledge about frogs. During this discussion, he notes that Rani, along with several other students, is confusing frogs from fantasy books and cartoons with real frogs. Mr. Sanjay follows the discussion with a Venn diagram showing the differences. He realizes that Ajay, a struggling reader, has a deep interest in frogs and clearly knows quite a bit about them. He makes a note to recommend some books on the topic for him to read during their next silent reading time.

### **Learning about Frog Habitats**

After the introductory activity, the students take a field trip to a local pond where they study the habitat that frogs need to survive. Students test the pH level of the water and take pictures to help them with setting up a frog habitat in their classroom.

After the field trip, students revisit the K-W-L chart and make any changes based on what they learned. Mr. Sanjay shows a video about frogs and asks students to write about what they have learned in their journals. Ravi, who has moderate learning disabilities, writes:

*I learned that frogs and toads are difrent and that frogs eat bugs and brids. Frogs come from eggs and tapoles.*

Anand, also with moderate learning disabilities, writes:

*Frogs liev in water and jump arond. They crok and sing. forgs can fly.*

After reading the journals, Mr. Sanjay conferences with Ravi and Anand individually to show them some resources that explain what frogs eat and how they move. He asks them questions until he is sure that they understand that only some frogs can fly and they do not eat birds. He also notes from the journals that several of his students are interested in flying frogs, so he sets up a learning center in the classroom with books, videos, and activities about this type of frog.

In the next activity, groups of students create murals depicting frog habitats. To prepare for this activity, Mr. Sanjay conducts a few mini-lessons on successful group behavior. The small-group interaction gives all of his students the opportunity to ask questions of their peers and to use the new vocabulary they are learning in a safe environment. This process is particularly helpful for his nonnative language speakers.

To help his students learn to organize their time, Mr. Sanjay gives them a partially filled in project plan to guide their work. He instructs them to think about what deadlines they can meet with the various parts of the project and record the dates in their plans. Students with disabilities fill out the plan as best they can and complete it with their special education educators. All students are encouraged to modify the plan so it makes sense for them.

Mr. Sanjay uses a checklist to monitor students' collaboration skills as they work on their murals. He takes notes that he uses when he informally conferences with students during the project.

<b>Skill</b>	<b>Rani</b>	<b>Mudassir</b>	<b>Mary</b>
Shares many ideas and contributes relevant information	<i>Only contributes ideas when asked</i>	<i>Has lots of good ideas</i>	<i>Shares some ideas, could speak with more confidence</i>
Encourages other members to share their ideas	<i>Not observed</i>	<i>Not observed</i>	<i>Good about asking Molly what she thinks</i>
Balances listening and speaking	<i>Mostly listening</i>	<i>Speaks way more than listens</i>	<i>Good</i>
Is concerned about others' feelings and ideas	<i>Not observed</i>	<i>Sometimes</i>	<i>Good</i>

As groups plan their murals, Mr. Sanjay circulates among them, providing materials to correct misconceptions, so their final projects will correctly reflect frogs' habitats.

In the next stage of the project, students create a frog habitat in the classroom. They observe the tadpoles and frogs, and record their observations in their learning

logs. Mr. Sanjay carefully explains the kinds of information he would like them to record, and he models an initial observation. He is aware that Rani often has difficulty being specific in her logs. Therefore, he provides her with a more structured observation form that asks her to fill in the blanks to answer specific questions about the frog habitat. He also knows that Dipak, who has mild learning disabilities, often writes so messily that even he cannot read it. Therefore, Mr. Sanjay sets up a computer learning log for Dipak.

### Creating a Final Project

After further investigation about the life cycle of frogs and their habitat, teachers form student teams to create projects showing what they have learned. To take advantage of individual interests and abilities, Mr. Sanjay gives students a choice of how they want to share their learning. They can create a paper book, newsletter, multimedia presentation, Web site, or short play. A variety of options allows students to use their interests as they expand their knowledge. He encourages students to choose a project that challenges them and helps them to learn new skills, such as using technology, writing, or acting.

For this project, Mr. Sanjay builds on the experience students had creating a project plan for drawing the mural. He provides whole-class instruction on how to break down the steps of their project into tasks, and gives students a slightly less structured guide than they received in the previous project. He circulates among the students, giving them individual support as needed, and stopping to conduct an impromptu mini-lesson if he notices common problems.

### A Student's Story: Rani's Reflection

With help, all students create their own checklists focusing on the self-direction goals they have set for the year and for the unit. Rani's self-assessment describes how well she did each day at meeting her goals.

Name <u>Rani</u>		Date <u>January 28</u>	
<b>Goals:</b>			
1. <u>I'll bring my notebook and pencil to class every day.</u>			
2. <u>I'll remember to compliment my group members when they have good ideas.</u>			
3. <u>I'll ask myself questions while I am studying frogs and then try to find the answers.</u>			
Goal #1	I did very well at my goal. I did exactly what I planned to do when I wrote the goal.	Sometimes I forgot about my goal and needed some help to do what I planned.	I did not meet my goal at all.
Goal #2	I did very well at my goal. I did exactly what I planned to do when I wrote the goal.	Sometimes I forgot about my goal and needed some help to do what I planned.	I did not meet my goal at all.
Goal	I did very well at my	Sometimes I forgot	I did not meet my goal

#3	goal. I did exactly what I planned to do when I wrote the goal.	about my goal and needed some help to do what I planned.	at all.
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### My Plan for Tomorrow

*I will put my notebook and pencil on the counter by my lunch, so I will remember to put them in my backpack.*

Because Mr. Sanjay knows that Rani often has difficulty thinking of strategies to organize her schoolwork, he discusses a variety of options to help her remember her materials. She chooses one that she thinks will be easy for her to implement.

### Using Peer- and Self-Assessment

Both Mr. Sanjay and his students use a rubric that describes his expectations for their final project. The class plans to use the rubric to monitor how well students are doing. Mr. Sanjay models for students how to assess their projects using the rubric, and he observes and takes anecdotal notes while they work. These notes give Mr. Sanjay data that he uses during formal and informal individual conferences to help his students achieve the unit's content and process objectives.

After students complete their projects, they share them with another group for feedback. Mr. Sanjay gives students some ideas about questions they can ask the other group's members about their presentations. He then gives them time in their own groups to brainstorm other questions that may help them improve their presentations. He also models how to respond to others' questions constructively and honestly. As students conduct the peer-assessment, Mr. Sanjay takes notes on how students ask for and offer feedback to use in future instruction.

Mr. Sanjay knows that individual misconceptions can often be camouflaged within a group project. He makes an extra effort through questioning and examining journal and log entries to determine the learning of individual students.

### Looking Back and Looking Forward

Mr. Sanjay does not see the units he teaches as separate and individual collections of information. Rather, he sees units as parts of a network of subject areas, knowledge, and skills. He asks students to reflect on various aspects of their learning at the end of a unit.

### A Student's Story: Ravi's Reflection

The following entries were written in response to the question, *What have you learned in this unit?*

Rani, who has mild learning disabilities, writes:

*I learnd lots of funn things abot frogs. They start as eggs and tadpoles. Then they beacom frogs who have eggs and then tadpoles again. This is a cycle becas it happens over and over again. I did a better job of litsning this tiem. I didn't hav to ask Mr. Sanjay to repeet the intsrutions.*

Ravi, a student with moderate learning disabilities, writes:

*I went to the pond to see frogs. It was fun. I playd wiht my friend Neetu and ate a chees sndwitch for lunch. We chaast som ducks.*

### **Planning for Future Units**

Mr. Sanjay uses what he learns from these reflections to work with individual students and to plan future units. He sees that Ravi uses the terms *eggs* and *tadpoles* correctly and shows that he understands the meaning of *cycle*. He also gives a specific example of how he listened better. Mr. Sanjay can see that Ravi has learned some important content, is aware of his learning processes, and can articulate his thoughts clearly. On the other hand, Rani's entry provides little information about the content of the unit or her progress toward her goals. She clearly needs further instruction on how to reflect on her learning. Mr. Sanjay also needs to use other data he has collected to ascertain her content knowledge. If the data show that she does not understand basic concepts, such as cycles in nature, he will need to work with her or ask her special education teacher to help her develop that essential understanding.

Careful assessment throughout this unit allows Mr. Sanjay to plan and conduct instruction more effectively to ensure that his students are achieving to their full potential. By using a variety of assessment strategies and encouraging self- and peer-assessments, his students learn content at a high level and develop the skills necessary to make them independent learner.