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# DEVELOPING AN UNDERSTANDING OF LITERACY THROUGH PRODUCTION OF POP-UP BOOKS

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Saying that many children do not understand the nature of literacy, researchers suggest that this confusion contributes to children's difficulty in learning to read and write (Canney and Winograd, 1979; Graves, 1983; Johns and Ellis, 1976), and others attribute it to the type of instruction children receive during regular lessons (Brown, 1978; Deford and Harste, 1982; Postman, 1979). These lessons require children to react to commercial materials and teacher's and deny them opportunities to practice what they have learned in a meaningful way. Olsen (1977, 1983) maintains that opportunities to use literacy, to organize thought in order to produce explicit meaning, are essential for children to understand literacy. He argues that the present practices are insufficient and proposes that emphasis during lessons be placed on production because "It is really the act of production—speaking, writing, drawing, and so on, that organizes thought... What you really want to have is children capable of expressing what is on their minds" (p. 230, 1983). This article presents a series of activities with pop-up and other movable books which allow children to produce meaning and should further their understanding of literacy.

While picture books, magazine, and even advertisements could provide the stimuli for production activities, pop-up and movable books offer some unique features which make them well-suited for early group literacy instruction. First, they are popular with children. In a follow-up study to the 1982 Children's Choice Program, Abrahamson and Shannon (1983) reported that two pop-up books were among the top 50 favorites despite odds of over 100 to one. Second, pop-up books are engaging, and they hold children's attention. Moreover, these books present interesting cognitive challenges for students because they often use two dimensional devices to simulate three dimensions. Readers must interpret two dimension representations presented on two and sometimes three geometric planes. When examined from these perspectives, pop-up books are more than just novelty items, as their critics often claim (Karlin, 1982). They provide useful tools with which children can develop and practice their literacy and begin to understand its nature—the production of meaning.

The production activities are organized into a four step sequence: Oral Reading and Analysis of Pop-up Books, Conversion of a Picture Book To a Pop-up Book, Writing and Rewriting Text

for Pop-up Books, and Construction of an Original Pop-up Book. Each successive step requires the children to accept more responsibility for the development of their literacy. Because the tasks become progressively more difficult, the children receive two types of support. First, part of the production tasks are completed for them during the first three steps. The students use their production to extend rather than to invent books. Second, all tasks are completed within groups so that children can provide moral and intellectual support for one another. The role of the teacher is to observe children carefully to determine if a group is experiencing too much difficulty and to intervene before they begin to lose interest. Furthermore, the teacher must decide when the group is ready for the next step. These steps do not form distinct categories and some steps should overlap. For example, teachers should continue to share pop-up books with groups for pleasure even after the groups begin artistic and written production.

#### Step One: Oral Reading and Analysis of Pop-up Books

Researchers point to the importance of reading aloud to children as a first step in their development of literacy (Chomsky, 1972; Durkin, 1966; Taylor, 1983; Teale, 1981). In step one, the teacher reads and rereads pop-up books to groups of children. These readings should be social events in which children are free to converse with the teacher and each other. During an interview (Park, 1982), Holdaway captured the spirit and intent of these readings. "Gathered around a book as a natural, sharing community, children learn more from actual participation than from direct instruction: They learn from the teacher's model, from their own sensible involvement, and from each other, without any sense of competition or pressure."

The response to these "shared book experiences" should include discussion of the ideas and concepts in the text and illustrations, predictions about what might come next, and reactions to authors' and illustrators' choices for text and illustrations. Initially, the teacher takes responsibility for much of the oral production, serving as the reader and discussion leader. Over time, the focus should gradually change until emphasis is placed on children's explicit verbalizations. As children become familiar with the stories and formats of pop-up and other movable books, they should be encouraged through the teacher's questioning to speak precisely and to reflect upon the logic behind their answers. The goal of step one is to familiarize children with the structures of pop-up books to the point where they can articulate hypothetical but real reasons for authors' use of text and illustrators' reasons for movable pictures.

Consider Carle's acclaimed The Honey Bee and The Robber. In this pop-up book, Carle tells the story of a honey bee as she gathers nectar, escapes from a bird and then a frog, dances to communicate the location of the flowers to the other bees, and saves the honey by stinging the robber bear. Discussion during the several readings should include: analysis of the author's message (What in the story tells you that Carle admires the bee?")

or "Why are there predators?"), prediction questions ("Where is the bee going next?" or "Who might be the robber?"), issues central to the pop-ups ("What different ways are used to create movement?" or "How are these movements engineered?"), and evaluation of the author's choices ("Why does Carle choose to have the bird move?" or "Why do you think the robber was a bear instead of a person?"). When children consider these types of questions and the possible variations of both text and illustrations, they confront the fundamental questions that authors and illustrators must answer.

Step one exposes children to the pleasures of reading pop-up and movable books. While the teacher provides initial direction, the books furnish visual incentive for children's oral production. Through the shared book experience, children organize their knowledge concerning literacy to speculate and to judge authors' and illustrators' attempts to produce meaning. Although children cannot be pushed to this reorganization of their knowledge, teacher can help by asking good questions, encouraging a supportive environment and providing insightful feedback to help children begin to appreciate the difficult choice that authors and illustrators must make. It is important that most children in a group can articulate explicitly some of the uses of movable illustrations and hypothesize about the construction of these movable forms before they move on to step two.

#### Step Two: Conversion Of A Picture Book To A Pop-up Book

Oral and artistic production are combined during the second step to transform a picture book into a pop-up book. The group of children must select an appropriate picture book, decide upon which parts of the illustrations should move and which type of pop-up will best interpret the meaning and tone of the text, make the pop-ups, transcribe the original text, and assemble the book. Since the entire task requires prolonged attention from all group members, the book should be a consensus choice.

For example, Sendak's Where the Wild Things Are is a likely and good choice because it is a children's favorite, its illustrations are lively, and it has a modest amount of text to transcribe. Different pop-ups would be needed for the passive action of Max sailing in and out of days and the violent action when he commands the wild rumpus to begin. These decisions deserve careful deliberation and should be made on a page by page basis. Models for the oral production required in this process may be found in the discussion among teacher and students during step one.

The technical aspects of making pop-ups are not as complicated as they might seem. Abrahamson and Stewart (1982) describe simple and useful designs and others are presented in Appendix 1. The actual construction might be a group project in which everyone helps to make each pop-up or after decisions are made for all the pop-ups, the labor might be divided among group members. Lowenfeld (1952) cautions that the process of artistic production is more important than the product to most children. Emphasis during this step should be on the process rather than the outcome of children's pop-up construction. The teacher's concern is with

the cognitive aspects of the tasks—the organization of children's thought and their understanding of different ways to represent meaning—not with the artwork, per se. The teacher should spend time inquiring about the logic behind the group's choice of a particular type of pop-up to be used to interpret a certain passage from the picture book. These inquiries will be most useful for students if they take place prior to the actual construction of the visuals. A complementary role for the teacher is to model more sophisticated ways to plan and construct pop-ups. Students will emulate the process if not the product. Since the construction will involve mistakes, the group should be encouraged to be patient and to expect failures before completing their book.

During this step, children are translating the concepts they developed in step one into oral and artistic production. While the text from the picture book supports this production, children become story editors and illustrators and the responsibility which accompanies these roles requires them to examine their own literary preferences, author's intentions, and the role of illustrations in books. The group has experienced a different way to produce meaning through the construction of movable illustrations and the pleasant connotation of literacy started during step one has been extended and refined through step two. Children have become involved in the production of literature rather than having it taught to them. Before they begin step three, children should be able to state why they selected certain pictures for translation and why they chose particular pop-ups. That is, they should be able to speak as illustrators.

### Step Three: Writing and Rewriting Text for Pop-up Books

Having accepted responsibility for oral and artistic production in the first two sets of activities, the group now takes the next logical step, written production. They rely on illustrations of movable books and write or rewrite the text to produce another book. The children can use the book's illustrations as a storyboard to organize, discuss and reorganize their text to fit their interpretation of the story before they commit themselves to formal written production. For instance, a reproduction of Meggendorfer's antique book, The City Park, has 14 die cut pages, each capturing part of a 19th century park. This textless, stand-up book can be set up in a variety of ways to produce different three dimensional panoramas of the park. The story depends on the observer's imagination; the book provides only the roughest of outlines and the children must produce the storyline. Moreover, this book can be used as a stimulus for a seemingly infinite number of different stories.

As children become aware of the relationship among text, illustrations and movement and as they assume the author's chair (Graves and Hansen, 1983), they will recognize that there is a mismatch between text and illustrations in some current movable books. Since pop-up books are often a better visual than literary experience, children can become "ghost writers" and rewrite the text to interpret the excitement of the illustrations without ruining a classic. For example, Pienkowski's book, Robot, winner

of the Kate Greenway Medal in 1979, reveals remarkable movable forms on each page. However, the plot of *Robot* is limited. Written as a letter from a robot son, the text barely hints at activities in the movable illustrations. The group might amplify Pienkowski's story or opt to write an entirely new plot based solely on the pop-ups. In either instance, the children produce explicit written language to explain to the reader what is happening in and beyond the illustrations and why it is happening. They can make the text as interesting as the illustrations.

During step three, the group collaborates with the illustrator of a movable book to create a new book. This requires them to translate their oral and artistic production techniques learned during the first two steps into a different set of symbols using a different set of rules. Moreover, the children must recognize the need to be more explicit in the organization of their thoughts than they were in the artistic production phase because they must produce the text that will carry most of the meaning. While the remarkable illustrations may help them in that process, the pop-ups also challenge their writing ability. The teacher's role at this point is to facilitate the group's writing by asking questions and occasionally making suggestions. Perhaps, the most difficult part of this role is to achieve that delicate balance between aid and interference. The children must control the production process if they are to learn to express themselves. While teacher intervention may improve a particular text, it will not help the children to develop strategies to cope with their production problems. The children are ready for the fourth step when they can present rationale for their decisions concerning the relationship between their text and the book's illustrations.

#### Step Four: Production of an Original Pop-up Book

Step four is the culminating activity in which the group produces its own pop-up book. Experience with the first three steps will prepare the children for this task, and they should have a fairly sophisticated understanding of the relationship between text and illustration that characterizes these books. In fact, only two activities are entirely new in step four: The group picks its own topic for the book and the children coordinate the oral, artistic and written production. While these may seem insignificant in comparison to learning the production processes, in previous steps children had part of each project completed for them—teachers read the books, authors wrote the text, and illustrators created the movable pictures. Under these conditions, the children could base their work closely on the work of others. In step four, their work will be truly original, the group may consult pop-up books to investigate how its author solved a particular problem, but the overall design, production and construction must be the group's own.

In the fourth step, the children may experience some difficulty combining explicit speech, artistic construction, and precise writing. Each type of production while practiced previously will appear slightly different from before. The oral language will

have to be more explicit because there will not be text or illustration to serve as referent; artistic production will require conception rather than interpretation; and the written text will have to carry even more of the meaning for the book because few children will match the commercial illustrators' artwork. The teacher must observe groups closely to recognize if intervention into group activities is needed and when it is desired. With the completion of their own pop-up book, the children should be able to analyze what it means to be an author and illustrator. They should be able to explain their decisions concerning text and art and how they had to compromise between their planning and the actual production of the book. Basically, they should be able to describe the nature of literacy within the context of pop-up book construction.

Pop-up and other movable books provide stimuli for oral, artistic, and written production. These types of production arranged in this four step sequence will help children understand the nature of literacy and will allow them to practice and refine their abilities to organize their thoughts to produce explicit meaning. Each step requires the children to articulate their understanding of some aspect of literacy and each succeeding step challenges and extends that knowledge. Through this cognitive struggle between understanding and production, children learn that they have power over their language—they have become truly literate.

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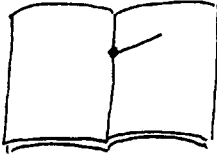
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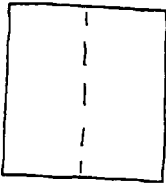
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#### APPENDIX I

1. Place a dot on the centerline about  $\frac{1}{3}$  of the way down from the top. Draw a line at some angle between 90 and 45 from that dot.



2. Measure the dot to the bottom of the page. This will be the outside dimension of your pop-up. Cut a square from a piece of construction paper with this dimension and fold the square in half.



3. Draw one outline of half of the object that will pop-up. Be sure to leave a one inch space at the bottom of the outline to serve as tabs. Cut out the pop-up shape and tabs. Be sure to cut a small right triangle at the folded edge of the tabs.



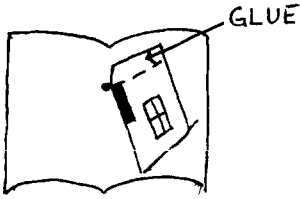
4. Unfold and decorate the front side of the pop-up. Crease the tabs back under the pop-up shape, then unfold the tabs.



5. Refold the pop-up. Put glue on the tabs and attach the pop-up to the line on the book page. Make sure that the bottom of the pop-up meets the dot on the centerline. Close the book and apply pressure to affix.

(continued next page)



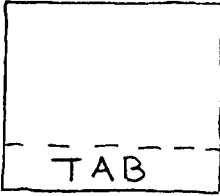


the pop-up to the page. Did you apply glue to both tabs so that the pop-up will stick to both pages and pop up when you open it? Allow 5 minutes for the glue to set.

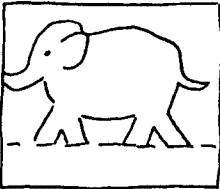


6. Open the book and inspect your pop-up.

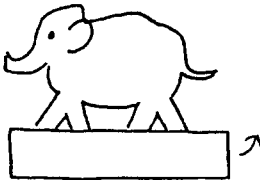
SECOND POP-UP



1. Cut a square the intended size of the pop-up. Fold the bottom in of the square to serve as a tab.



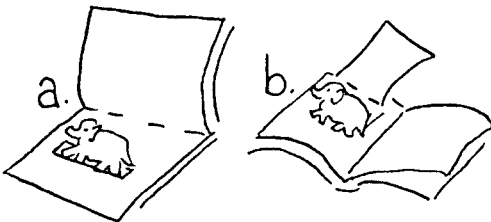
2. Draw the outline of the pop-up object. Be sure that the outline meets the tab at several points.

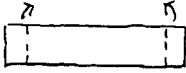
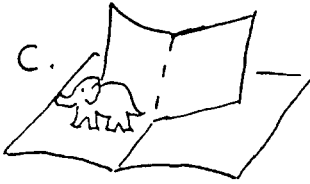


3. Cut out the pop-up and tab. Fold the tab back.

4. Decide on the type of background for your pop-up. The background could be a. the second page, b. a coversheet, or c. another pop-up. The example will demonstrate the use of background a.

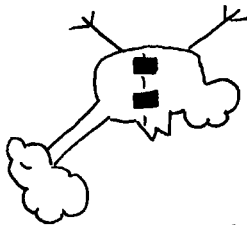
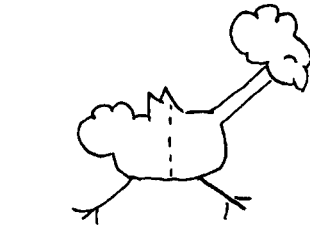
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5. Locate the pop-up on the page and glue the tab to the page. Be sure that you leave enough room for the pop-up to lie flat and not hang out of the book.
6. Measure the distance from the base of the pop-up to the background. Add one inch to that distance and cut a one inch strip from a piece of construction paper. Fold a 1/2 inch tab at each end of the strip.
7. Glue on tab to the back of the pop-up and the other end to the back ground. Fold the book closed and apply pressure. Let it set for 5 minutes, and then your pop-up is ready.

### THIRD POP-UP



1. Draw and decorate the figure that will pop up and cut it out.
2. Fold the figure in half.
3. Cut at least 8 strips 1 inch long and 1/2 inch wide. You may need more strips if your figure is large. Always cut an even number. Fold a 1/4 inch tab at each end of each strip.
4. Make at least four pairs of strips by glueing two strips together. The tabs should point in opposite directions.
5. After those have dried, glue one strip pair near the top of the figure by putting glue on the tabs and pressing them against the figure. In the same way, glue a second strip pair near the bottom of the figure. The center of the tabs should be on the center fold of the figure in each case.
6. Glue the other end of the strip pairs to the centerline between the pages. Make sure that the center of the tabs is on the centerline between the pages.
7. Use the remaining strip pairs to support the rest of the pop-up figure. Close book for 5 minutes.