

THE EFFECT OF DIRECT INSTRUCTION OF  
MAIN IDEA AND SUPPORTING DETAILS  
ON EXPOSITORY PASSAGES:  
A MULTI-SENSORY APPROACH

FINAL THESIS

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by

Patricia C. Thomas

State University of New York  
College at Brockport  
Brockport, New York

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SUBMITTED BY:

Patricia C. Thomas

APPROVED BY:

James L. Begg  
Thesis Advisor

4/14/88  
Date

Arthur E. Smith  
Second Faculty Reader

4/14/88  
Date

Morris J. Beers  
Chair, Graduate  
Policies Committee

4/22/88  
Date

## Abstract

The purpose of this study was to investigate the effectiveness of direct instruction of main idea and supporting details on expository passages using a multi-sensory approach.

The subjects of this study were 32 ninth, tenth, eleventh, and twelfth grade remedial reading and writing students in a rural high school in Western New York State.

All subjects were administered a researcher-designed pretest using expository passages. A main idea question and a supporting detail question were given for each of six passages. Three separate treatment lessons were administered using a visual, tactile, and auditory approach. A posttest, designed to be equal in difficulty to the pretest, was administered after the completion of the three treatment lessons.

A t test of dependent means was used to test each hypothesis at the .05 level of significance.

The data from the study reached statistical significance for the selection of main ideas after direct instruction using a multi-sensory approach. Results of the study showed no statistically

significant difference in the selection of  
supporting details after direct instruction using  
a multi-sensory approach.

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## Chapter I

### Statement of the Problem

#### Purpose

The purpose of this study is to determine whether direct instruction in main idea and details, using a multi-sensory approach, will increase the ability of the subjects to select main ideas and recall details of expository passages.

#### Need for the Study

Nearly all subjects in secondary schools require reading. Work is often assigned without any instruction as to how to select the important information from that reading.

An important educational goal is to help students acquire information from their reading in an efficient manner (Meyer, Brandt, & Bluth, 1980). This goal of instruction begins as early as third grade. In Durkin's (1978-79) observation of elementary reading and social studies classes almost no direct comprehension instruction was observed. The teachers observed did not feel this

was a time to improve children's comprehension ability.

Several research studies using direct instruction of main idea and supporting details have been conducted with elementary and middle grade students (Axelrod, 1976; Baumann, 1983; Baumann, 1984; Baumann & Serra, 1984; Baumann, 1986; Brown & Day, 1983; Taylor, 1986; Taylor et al., 1985; Winograd, 1984).

Studies with older students have dealt with top level structure (McGee, 1982; Meyer et al., 1980), summarization (Hare & Borchardt, 1984; Williams, 1984; Williams et al., 1984; Winograd, 1984), and locating main ideas in history textbooks (Donlan, 1980).

Learning styles should be considered when instructing students (Dunn & Dunn, 1978), particularly with remedial students. Some students respond best with a visual aid. Others need to learn with a tactile approach. Still others must have lessons reinforced auditorally.

More focused efforts to teach recognition of main ideas need to be used (Sjostrom & Hare,

1984). There is a need to directly instruct students in the selection of main idea and details. Using a multi-sensory approach may enhance this instruction.

### Questions

For the purpose of this study the following questions were posed:

1. Given direct instruction in the selection of main ideas in expository passages, using a multi-sensory approach, will the subjects increase their ability to select main ideas?

2. Given direct instruction in the selection of supporting details in expository passages, using a multi-sensory approach, will the subjects increase their ability to select supporting details?

### Definitions of Terms

direct instruction- working directly with the students, monitoring their work, and providing immediate feedback

main idea- the general theme of a passage supported by the details

supporting details- statements or facts that support the main idea

expository- factual, often science or social studies material

multi-sensory- using more than one sense, in this case visual, tactile, and auditory

#### Limitations of the Study

This study was limited by the size of the sample and by the truancy as well as normal absences in a secondary setting. It is difficult to separate the multi-sensory treatment from the direct instruction to determine which variable is more effective.

#### Summary

Over a period of time, several studies have been conducted leading to greater emphasis on direct instruction of main idea and supporting details. Since the majority of these studies took place at the elementary or middle grade levels, there is a need to research the techniques being used at the secondary level. Using a multi-sensory approach should enhance this instruction.

## Chapter II

### Review of the Literature

#### Statement of the Purpose

The purpose of this study was to determine whether direct instruction of main idea and supporting details, using a multi-sensory approach, would increase the ability of the subjects to select main ideas and recall details of expository passages.

#### Main Idea Instruction

For most college-bound high school students, reading and summarizing material is second nature. Such students have developed the ability to read quickly and grasp the gist of the author. Many other secondary students, in particular poor readers, are not able to identify the main idea and supporting details.

Cunningham (1985) researched the history of teaching main idea. He found that it was not until 1920 that this was an accepted educational goal. Prior to that time teachers posed questions and expected students to have memorized all the

facts in order to answer the questions. In the 1930's, teaching main idea had become a widespread concern. By 1981, noting main idea and supporting details was the one comprehension activity most frequently presented in four basal readers. It was also most frequently recommended in five reading methods textbooks (Johnson & Barrett, 1981).

Durkin (1978-79) used actual classroom observations to examine comprehension instruction in reading and social studies. She selected grades three through six since we can assume more comprehension instruction takes place there. In one fourth grade reading classroom, less than 1% of the time was spent on comprehension instruction. The largest portion of the day was spent on comprehension assessment. In social studies comprehension instruction was not observed at all. Durkin found that none of the social studies teachers observed felt this was a time to improve children's comprehension ability.

When Durkin (1981) examined five basal reading series she concluded that, although they provide definitions, assessment questions, and

practice exercises, very little is offered in the way of direct instruction.

### Identifying Main Idea in Text

Baumann and Serra (1984) conducted a study to see how often and where main ideas occurred in children's social studies textbooks. This was a modified replication of Braddock's research (1974). Braddock analyzed adult expository materials from periodicals looking for the frequency and placement of topic sentences. Baumann and Serra used second, fourth, sixth, and eighth grade social studies texts. They found that only 27% of all short passages and 44% of all paragraphs had explicit main ideas. Only 27% of all paragraphs began with a directly stated main idea.

A vital reading comprehension skill is that of identifying main ideas in text. Usually primary grade students are given short narrative selections to try and find the main idea (Hare & Milligan, 1984). Expository text follows in later grades. Hare and Milligan selected four well-known basal reading series and reviewed the

manuals of grades one through six. They were looking for explanations and directives related to main idea. As a result of this search, they were able to combine most of the directives into seven categories. The three most common were to choose a main idea, generate a main idea, or respond to questions about the main idea of a selection. The rest of the seven categories were selection of the title in various forms. The only advice or direction in finding the main idea was to seek a topic sentence or the one thing the other sentences tell about. It suggested that the topic sentence is often the first sentence . In addition, only one directive told the student that if the details were not supporting an idea, it probably was not the main idea.

On the secondary level, Donlan (1980), searched for methods to teach main ideas in history textbooks. In his review of the literature, he takes note of the secondary reading methods books. Olson and Ames (1973) suggested seven exercises to ferret out main ideas. Newspaper headlines can be used to teach the concepts of main idea according to Karlin (1972).

Robinson's (1975) technique is to consider the main idea as the form of a principle, hypothesis, or conclusion. He calls this his "generalization pattern". Shepherd (1978) suggests a list of activities to be used in the classroom to teach main idea. Karlin made a very apt point. If students cannot find the main idea, teachers should not ask them. They need to teach it!

#### Sentence Relationships in Paragraphs

Donlan devised a three-stage process for teaching logical relationships in paragraphs. First, he developed exercises to learn word relationships. These four relationships are equal, opposite, superior/subordinate, or no relationship. This process may help the reader follow the thought patterns of the author. Next, he used exercises to find the relationship of key words in pairs, in particular superior and subordinate since main idea and details follow this pattern in history texts. His third method was to use exercises to detect the key words in whole paragraphs.

He concluded that problem readers place no greater emphasis on one sentence or thought over any other sentence(s). They treat all equally and therefore miss the greater meanings in expository writing.

Because textbooks often fail to highlight main ideas, teachers need to analyze the relationship of sentences within paragraphs in order to teach students how to locate the main idea.

Restructuring of paragraphs proved to be a helpful teaching technique at the fifth grade level (Baumann, 1986). He gave part of the students regular science textbook passages. The others were given rewritten versions where the main idea was placed first and cues such as italics and headings were used. The students using the rewritten version were able to construct or generate more main ideas than those using the original version.

In an earlier study Baumann (1984) found that sixth grade students who were directly instructed were better able to comprehend main ideas than

students instructed from basal readers or not receiving any instruction at all.

Several studies have indicated that young readers are not able to grasp the central theme or "gist" of expository reading (Baumann, 1983; Taylor, 1986; Winograd, 1984).

Still others have worked with the higher level of summarization and awareness of text structure (Hare & Borchardt, 1984; McGee, 1982; Meyer, Brandt, & Bluth, 1980; Taylor, 1985; Winograd, 1984). It is believed that adult readers should be able to summarize or give the "gist" of what they have read (Taylor, 1985). But middle grade students, even above average readers, are not skilled at this (Baumann, 1983; Brown & Day, 1983; Taylor, Olson, Prenn, Rybezynski, & Zakaluk, 1985). Taylor suggests that these readers have not been taught how to comprehend and to remember important information or even how to read for it.

#### Need for Direct Instruction

Reading teachers know that defining main idea and learning how to find it is not a simple task (Hare & Bingham, 1986). Too often students are

given practice worksheets and no real instruction. Hare and Bingham developed four lessons for direct instruction of main idea. These were developed primarily, but not exclusively, for expository texts.

First, familiarize students with unknown concepts and information in the text. Next, teach students to recognize different text structures with their idiosyncratic main ideas. Third, judiciously encourage students to use the intuitive "Aha-So What" test for determining main ideas in expository materials. And finally, show older students how to find main ideas in real world passages. (pp.188-190)

Another researcher, Alexander (1976), developed strategies for helping students find the main idea. She was concerned because there is so much written about the importance of developing main idea skills and so little in the way of instruction. So often main idea is confused with the topic or specific details which are

emphasized, but not part of the main idea. Some reading passages are too difficult or too poorly written to be able to discern the main idea. The first step in her strategy is to have the students read passages and decide what most of it is about. This helps them find the topic. Next, they will look for the most general statement about the topic. While doing this she makes them aware of what is repeated, hinted at, or emphasized. If these two methods are not working, she has students think of each sentence as a factor in an addition problem. Each specific statement will add up to one general statement and thus become the main idea. Finally, she uses the visual of a T shape. Horizontally, the top part will be the topic sentence with the main idea directly below it. The supporting details will run vertically on the T shape. Each of these techniques could enhance the ability of the student to locate details and generate a main idea.

Taylor and others (1985) were aware of how often worksheets were used in elementary grades to teach reading for main ideas. They decided to conduct experiments to see if students at the

fifth grade level could read for main ideas in textbooks. They found that students in their study needed direct instruction when locating main ideas in social studies passages.

In a more recent study, Taylor (1986) worked with middle grade students (grades five through eight) using content textbook material. She developed her own summarization techniques which included hierarchial summarization, cooperative summarization, and mapping. Students were encouraged to use their own words and practice recall with a partner. Fifth graders needed five or six one hour sessions, but older students probably would not need as many sessions.

When Axelrod (1976) worked with remedial reading students, he had to teach them that main ideas could be in several locations or even implied. He found that teaching them to look for supporting details avoided some of their past confusion. Another false assumption by students is that, given several choices for main idea, they think the one with the most words is the main idea. When this happens he retells the story so their choice could be the main idea.

Baumann has devoted a whole chapter of his book to the direct instruction of main idea comprehension (1986). Based on past successes of teachers, he presents a direct instruction strategy plus three model lessons. He refers to research by Rosenshine and Stevens (1984) showing that students instructed by a teacher do better than those who are self-instructed. Students do best when receiving systematic instruction and the teacher monitors responses and provides feedback about their performance.

#### Text Structure

In order to determine what is important to remember, Meyer and others (1980) focused on the organizational structure. They selected ninth grade students who were asked to work with text structure in expository text. They were looking for correlation of text organization with comprehension success of the students. Their research showed that good comprehenders, based on Stanford Achievement Test scores, were able to follow the structure strategy, while poor comprehenders were not. The use of signaling

aided poor comprehenders in immediate recall and somewhat increased their use of text structure.

When Phifer, McNickle, Ronning, and Glover (1983) conducted four experiments with undergraduates, they found that the presence of details increased the recall of major ideas in text. This held true for artificial and natural texts.

McGee (1982) worked with third and fifth grade students to find out if they were aware of text structure and if this awareness would aid in recall. The fifth grade good readers showed more skill in this area than either fifth grade poor readers or third grade good readers. This may suggest that the skill increases with age and reading ability.

Eighth-grade students seem to be aware of the task demand of summarization according to research by Winograd (1984). Reading comprehension difficulties, however, also affect what the student considers important. Teachers need to evaluate the students' ability and provide instruction where needed.

When students are confronted with expository text their skills must increase to meet the demand of the material. Two studies conducted by Williams (1984) and Williams, Taylor, & de Cani (1986) used expository text and the skill of macrostructure--a summarization technique.

The first study, with fourth and sixth graders as subjects, provided additional details to help the students find the category when no topic sentence was provided.

The second study involved third, fifth, and seventh graders as well as adults. They were asked to choose the best title, write a summary sentence, or write one additional sentence for each expository paragraph. The indications were that performance improves with age.

Teaching low performing children to comprehend main idea was the thrust of Kameenui's (1986) instructions. He produced structured, systematic lessons. Each lesson was made up of a set up (what materials to be used), a modeled set of examples, and a series of test examples. He developed these lessons to be used at beginning, intermediate, and advanced levels.

### Teaching Strategies

Aulls (1986) believed that there were basic responsibilities in teaching main idea skills. Teachers need to know what a main idea is and must be able to explain what it is and why it is important to learn. From there a teacher must lead instruction from identifying a main idea to inferring or generating one. Testing cannot substitute for direct instruction. They must offer a definition with examples so the students will know what they are expected to learn and then verbally model this procedure.

When Memory (1983) taught sixth graders to locate the main idea of cause-effect passages he used prequestions as an adjunct aid. Sjoström and Hare (1984) found that direct instruction of main idea surpassed instruction in vocabulary development with minority high school students. As an extension of main idea instruction Flood and Lapp (1986) recommend that teachers focus on the reading and writing relationship. When students become aware of the author's organization of main idea and details in their reading, they can begin to transfer that knowledge to their writing.

Flood and Lapp believe you can teach students to read for main ideas by writing main ideas.

Recent years have brought to light the need to respond to the learning styles of our students. Dunn and Dunn (1978) developed a learning styles inventory to aid teachers in responding to the student's best style of learning.

The senses are involved in three of these categories. Some people are visually oriented, others are auditorally oriented and, according to Bruno (1982), the largest percentage are tactually/kinesthetically oriented. It seems, therefore, innovative to respond to learning styles while instructing students in the selection of main ideas and supporting details.

#### Summary

Several researchers have provided support for the direct instruction of main idea and details (Alexander, 1976; Baumann, 1984; Donlan, 1980; Hare & Bingham, 1986; Hare & Milligan, 1984; Phifer et al., 1983).

Still others have offered specific directions for this procedure (Alexander, 1976; Aulls, 1986;

Baumann, 1986; Flood & Lapp, 1986; Kameenui, 1986; Memory, 1983; Meyer et al., 1980; Sjostrom & Hare, 1984; Taylor, 1986; Williams, 1984; Williams et al., 1984; Winograd, 1984).

It is apparent that we must persist in our efforts to provide direct instruction of main ideas and the details that support them. Researchers will continue to try new methods of instruction to determine which method(s) provides the greatest results. We have the prerogative to select what works best for our students.

## Chapter III

### Design of the Study

The purpose of this study was to determine whether direct instruction in main idea and supporting details , using a multi-sensory approach, will increase the ability of the subjects to select main ideas and recall details of expository passages.

#### Hypotheses

This study investigated the following null hypotheses:

1. There is no statistically significant difference between the mean scores of the researcher-designed main idea pretest and the mean scores of the researcher-designed posttest.

2. There is no statistically significant difference between the mean scores of the researcher-designed supporting details pretest and the mean scores of the researcher-designed posttest.

## Methodology

### Subjects

The subjects involved in this study were ninth, tenth, eleventh, and twelfth grade students who participate in a remedial reading and writing program in a rural high school in Western New York State. They were placed in this program because they were deficient in skills required to pass the New York State Competency Tests in reading and writing.

The group consisted of 32 students. They were administered a researcher designed pretest, received the treatment, and then were administered the researcher designed posttest.

### Instruments

A pretest (Appendix A) and posttest (Appendix B) were created by the researcher using passages from Six-Way Paragraphs by Walter Pauk (1974). Only the main idea and detail questions were used for each of six expository passages.

The treatment lessons used a visual of a table, highlighters , and several practice

passages also chosen from the same text as the pre and posttests.

### Procedures

A pilot test was given to fifteen students in a nearby rural high school. These students were participants in a remedial reading and writing program in that school. They were administered both the pretest and posttest with no treatment. The means of the two tests for main ideas were 3.2 and 3.13. The means for details were 3.0 and 3.2. This indicated that the pre and posttests were somewhat equal in difficulty.

All 32 students were administered the researcher designed pretest consisting of six expository passages from Six-Way Paragraphs. These passages were approximately third, fifth, seventh, eighth, ninth, and tenth grade readability levels as predetermined by the author, Walter Pauk, using the Dale-Chall Readability Formula.

These students then received three treatment sessions. The first lesson used the visual of a table. The table top represented the main idea

and the table legs represented the supporting details.

The second lesson employed the tactile sense. Each student was given two different colored highlighters. One color was used to highlight the main idea in sample passages. The other color was used to highlight the supporting details.

The third lesson primarily used the auditory sense. Passages were read orally and students verbalized the main idea and details.

After the multi-sensory treatment the students were administered a posttest designed to closely resemble the pretest. Six expository passages from the six readability levels were again chosen using only the main idea and detail questions.

#### Statistical Analysis

A dependent t test was used to test the two questions at the .05 level of significance.

#### Summary

A pretest, treatment, posttest design was implemented to study the effectiveness of direct instruction of main idea and supporting details.

A multi-sensory approach was chosen as the method of instruction. After the treatment, the scores of the researcher designed pretest were compared to the scores of the researcher designed posttest to determine if direct instruction had made a significant difference on the selection of main idea and the selection of details.

Chapter IV  
Analysis of Data

Purpose

The purpose of this study was to investigate the effectiveness of direct instruction of main idea and supporting details on expository passages, using a multi-sensory approach, with ninth, tenth, eleventh, and twelfth grade remedial reading and writing students.

Findings and Interpretations

The following questions were investigated:

1. Is there a statistically significant difference in the selection of main idea of expository passages after direct instruction using a multi-sensory approach?

2. Is there a statistically significant difference in the selection of supporting details of expository passages after direct instruction using a multi-sensory approach?

The first question was to determine whether there was a significant difference in the selection of main idea of expository passages between the pretest and the posttest after direct

instruction using a multi-sensory approach. A two-tailed  $t$  test of dependent means was used to test the hypothesis at the .05 level of significance. Table 1 provides the data for this statistical analysis.

Table 1

Two-tailed  $t$  test of Dependent Means on the Scores of a Pretest and Posttest on the Selection of Main Ideas

Pretest Mean	Posttest Mean	t Obtained	p
3.93	4.41	-2.743	.05

Since the  $t$  required at the 95% confidence level is  $\pm 2.048$  and the  $t$  obtained in the selection of main idea was  $-2.743$ , the data reject the null hypothesis. There is a statistically significant difference in the selection of main ideas of expository passages after direct instruction using a multi-sensory approach.

The second question was to determine whether there was a statistically significant difference in the selection of supporting details of expository passages after direct instruction using

a multi-sensory approach. Table 2 provides the data for this statistical analysis.

Table 2

Two-tailed  $t$  test of Dependent Means on the Scores of a Pretest and Posttest on the Selection of Supporting Details

Pretest Mean	Posttest Mean	$t$ obtained	P
3.76	4.0	-.805 (n.s.)	.405

Since the  $t$  required at the 95% confidence level was  $\pm 2.048$  and the  $t$  obtained in the selection of supporting details was  $-.805$ , the data retain the null hypothesis. There is no statistically significant difference in the selection of supporting details of expository passages after direct instruction using a multi-sensory approach.

#### Summary

The purpose of this study was to investigate the effectiveness of direct instruction of main ideas and supporting details in expository passages using a multi-sensory approach.

Two questions were posed in Chapter I. The first question was focused on the effectiveness of

direct instruction of main ideas in expository passages using a multi-sensory approach. The researcher-designed pre and posttests indicated that this was an effective means of instruction. The second question was concerned with the effectiveness of direct instruction of supporting details in expository passages using a multi-sensory approach. The pre and posttests indicate that there is no significance difference in the selection of supporting details in expository passages after direct instruction using a multi-sensory approach.

Chapter V  
Conclusions and Implications

Purpose

The primary purpose of this study was to investigate the effectiveness of direct instruction of main ideas and supporting details of expository passages using a multi-sensory approach.

Conclusions

The results of this study indicated that direct instruction of main ideas in expository passages, using a multi-sensory approach, was effective for ninth, tenth, eleventh, and twelfth grade remedial reading and writing students. A  $t$  test was used to test the hypothesis at the .05 level of significance which supported these results.

The direct instruction of supporting details in expository passages using a multi-sensory approach showed no statistically significant difference. A  $t$  test was used to test the hypothesis at the .05 level of significance which supports these results.

This study was constructed so the order of the treatment lessons would not affect the study. Students in these classes are frequently absent and several lessons had to be made up before the student could take the posttest. Twenty-nine students completed the study. This researcher questions whether continuity of lessons affects the results of what is retained and the length of time it is retained.

Another unresearched area is that of student attitude. Does attitude affect the way students perform? Have they learned to randomly select answers without any real effort to comprehend what they have read? Would a concentrated effort of positive reinforcement improve reading comprehension?

Rosenshine and Stevens (1984) found that students directly instructed by a teacher performed better than those who were self-instructed. The results of this study support their findings.

Although this study did not teach significance for supporting details, perhaps the direct instruction given aided the selection of

main ideas similar to the undergraduates in the study by Phifer, McNickle, Ronning, and Glover (1983). In their study, the presence of details increased the recall of major ideas.

During this researcher's instruction of main idea, students were made aware of the false assumption of picking the choice with the most words. This was emphasized in Axelrod's (1976) study with remedial reading students. The students in this study also were found to randomly select answers if they were unsure of an answer.

#### Implications for Future Research

Research studies of direct instruction of main idea and supporting details have previously been focused on elementary and middle grades (Baumann, 1983; Baumann, 1984; Baumann, 1986; Taylor, 1986; Winograd, 1984). Secondary studies were primarily concerned with summarization techniques which require a higher level of organization (Donlan, 1980; Hare & Borchardt, 1984; McGee, 1982; Meyer et al., 1980; Taylor, 1986; Winograd, 1984). If students have been placed in remediation classes there is a need to identify the skills they are lacking and then

directly instruct the students in these skills. There is a connection between reading and writing (Flood & Lapp, 1986). Identifying main ideas and supporting details are skills needed in both reading and writing.

Future researchers might want to consider the following:

1. Use a larger sample
2. Extend the number of treatment lessons and test after each type of treatment
3. Conduct statistical analysis of reading students separately from writing students
4. Limit the instruction to one treatment style, particularly the tactile approach
5. Give a second posttest after a delay of two weeks or more
6. Consider student attitudes during testing situations.

#### Implications for Classroom Practice

On the basis of this study, direct instruction of main idea can be effective for secondary remedial reading and writing students when reading expository passages. Since much of their required reading is of this type, it can be

suggested as an instructional method for content area teachers. This also makes teachers aware of what they directly teach and what they want students to be able to recall.

#### Summary

This study demonstrated the effectiveness of direct instruction of main idea in expository passages using a multi-sensory approach. This was effective for secondary remedial reading and writing students. This study was not effective for the direct instruction of supporting details in expository passages using a multi-sensory approach.

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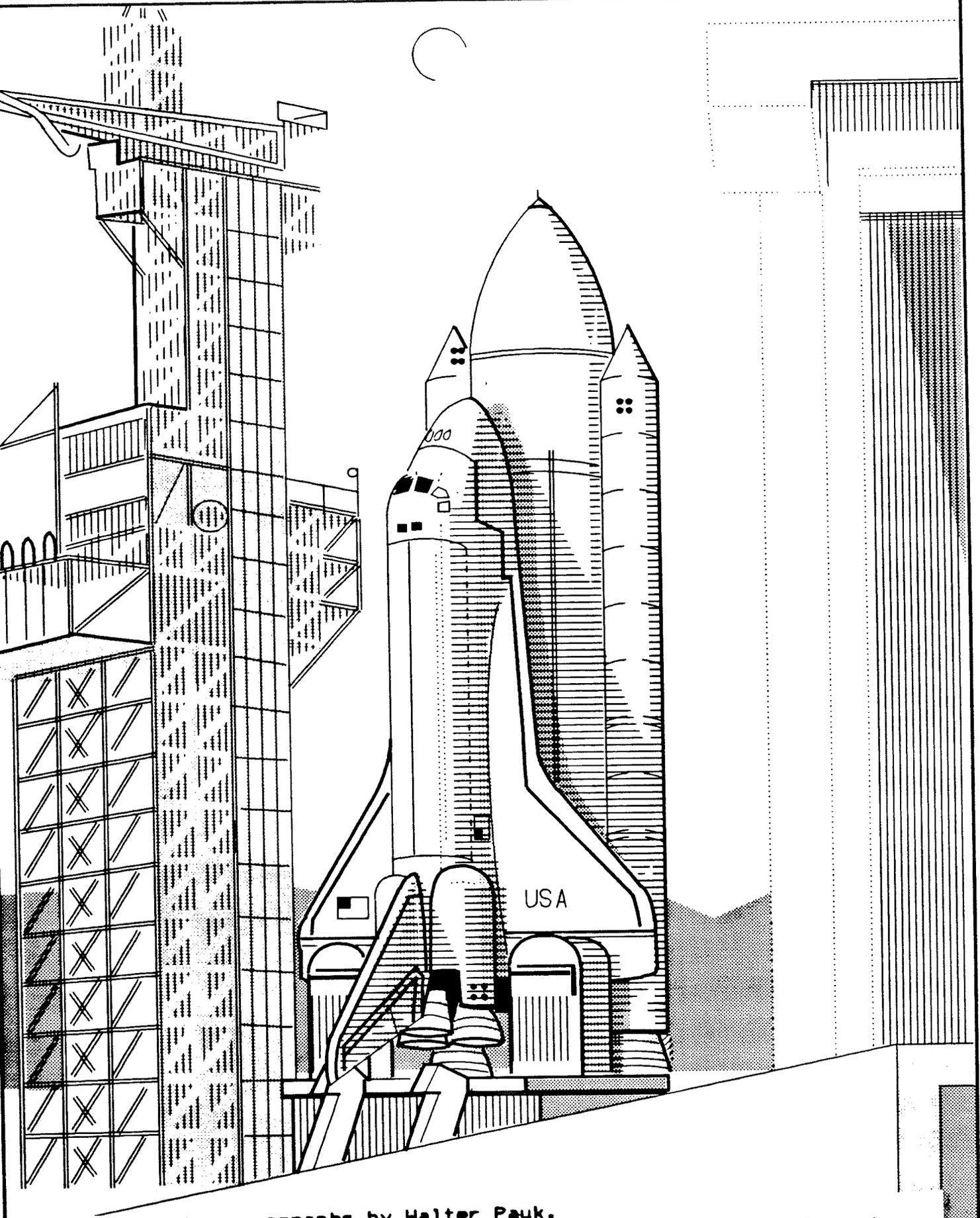
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Appendix A

Pretest

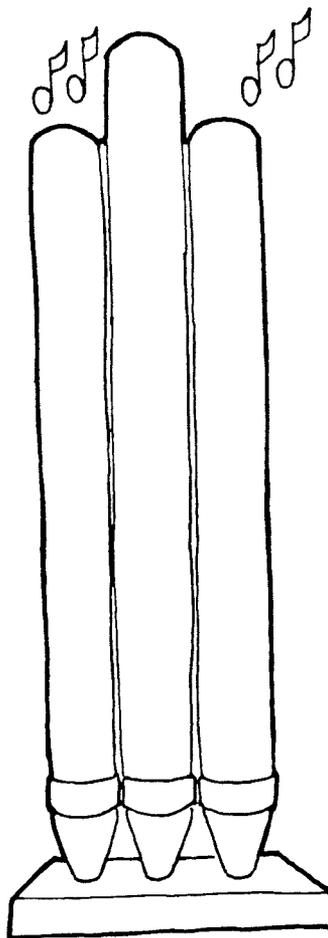


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## 1. LOUIS BRAILLE, ALPHABET MAKER

It took a blind man to lead the way in devising a system that permits the blind to read. Louis Braille, a normal, healthy, French child at birth, became sightless when he was only three. At ten, he was placed in a home for the blind, a ward of society. But young Louis had great talent. He became a skilled musician. Soon he was appointed a church organist in Paris.

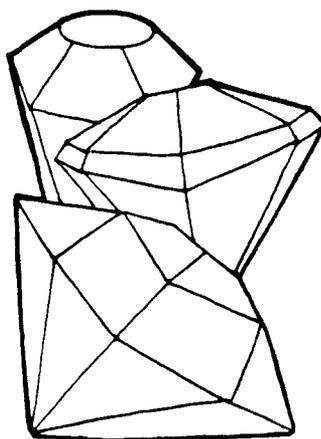
When he was twenty-five, he became a teacher of the blind. To help his students with their studies, he laboriously developed a crude alphabet of raised indentations on stiff paper so that his young flock could study both written and musical works. This, perfected, became the Braille system.



- I. What is the main idea of the passage?
  - a. Blind people can be quite talented and even become church organists.
  - b. Louis Braille was a blind man.
  - c. It was a blind person that developed a reading method for blind people.
  - d. Blind people can read.
  
- I. You wouldn't expect that
  - a. Louis learned to read before he was blind.
  - b. Mr. Braille wanted to help the blind to read.
  - c. Braille was one of the most difficult alphabets to read.
  - d. every blind person can read Braille.

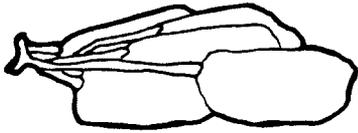
## DIAMONDS

The quality of a diamond and the skilled workmanship needed to enhance it figure heavily in the stone's worth. Color, freedom from flaws, weight and cutting are the hallmarks. Diamonds can be yellow or black, red, pink, blue, brown, or green; but pure white, which will refract a shower of hues when properly cut, is the most desirable color. Flawless, when applied to diamonds, has a very special meaning. If a trained eye using ten-power magnification in normal daylight detects no flaws, cracks, carbon spots or other blemishes, the stone is considered flawless.



- I. Two hallmarks of quality in a diamond discussed in this paragraph are
  - a. weight and size.
  - b. cutting and polishing.
  - c. setting and finishing.
  - d. color and freedom from flaws.
- II. A flawless stone is one that shows no flaws, cracks, carbon spots, or other blemishes in normal daylight under a magnification power of
  - a. five.
  - b. ten.
  - c. fifteen.
  - d. twenty.

### 3. OASIS FRUIT



Probably the oldest known cultivated tree, the date palm has always seen yeoman service especially in the Arab Middle East where it is believed to have originated. Its fruit, the date, is a staple food. Dates can be eaten raw, cooked, baked into cakes or pressed into a delicious syrup that Arabs relish. Rich in carbohydrates, dates contain little fat and about 40 calories an ounce. The longevity of many Bedouins of the desert lands has been attributed, at least in part, to the nutritional benefits of the date, which ranks so importantly in their diet.

Its use as a food source accounts for only one asset of the date palm. The trunk makes excellent house-building timber; the mid-ribs of the larger leaves go into furniture and into crates—for shipping dates! The leaflets of the tree are woven into baskets and floor mats; the fibrous portions of the trunk supply rope; the larger fronds are braided into fences, erected to break the advance of sand dunes. Even the stones of the date do not go unused. Crushed, they are fed to livestock as fodder.

#### I. Date palms

- a. are delicious raw or cooked.
- b. are worshiped in yeoman services.
- c. supply food and materials.
- d. are often braided into fences.

#### II. Dates

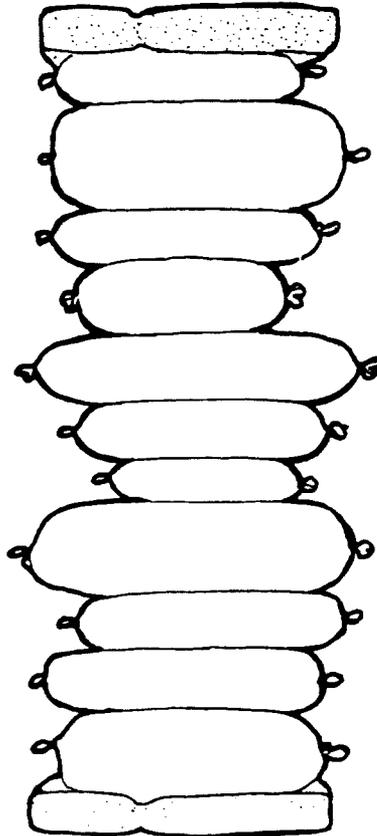
- a. are nutritionally rich.
- b. cause Bedouins to die young.
- c. are shipped in sacks.
- d. are used in building houses.

#### 4. THE SAUSAGE

Despite the enormous quantities of sausages they consume each year, few Americans are acquainted with the names of the numerous varieties available in this country. A recent survey showed that less than 50 percent know any names beyond frankfurter, Bologna and salami.

Buyers usually walk into a delicatessen or butcher shop and point mutely to the loaf or link that strikes their fancy.

If you were to compile the names of all the types of sausage available in the world, you'd wind up with nearly 500 names on your list. There are more than 100 kinds—domestic and imported—sold in the United States alone.



- I. The main idea that the author tries to get across is
  - a. most Americans don't like the many foreign sausages.
  - b. many Americans are unfamiliar with the variety of sausages.
  - c. people are beginning to buy a lot of sausages at butchers.
  - d. that it is best to be silent when you don't know the name of a sausage.
  
- II. Less than fifty percent of the Americans surveyed
  - a. can name every kind of sausage, domestic and imported.
  - b. eat only salami, Bologna, and frankfurters.
  - c. know what salami, Bologna, and frankfurters are.
  - d. know any sausage names besides frankfurter, Bologna and salami.

## 5. MAN ON THE MOVE

Although steam power had been used successfully to operate a mill, its potential for propelling vehicles and ships was not realized until 1783. That was the year that a French nobleman, the Marquis d'Abbans, created a steam-driven paddle-wheel vessel that could buck a stiff river current. Twenty years later, America's Robert Fulton launched the first successful steamboat, and by 1807 his famous *Clermont* was puffing up and down the Hudson between New York and Albany.

Steam power won world-wide attention in 1819, when the 100-foot American packet *Savannah* became the first steamship to cross the Atlantic. Even though the *Savannah's* engine broke down on the homeward voyage, forcing her to rely on her sail power, there was no doubt that steam would henceforth move men across water.

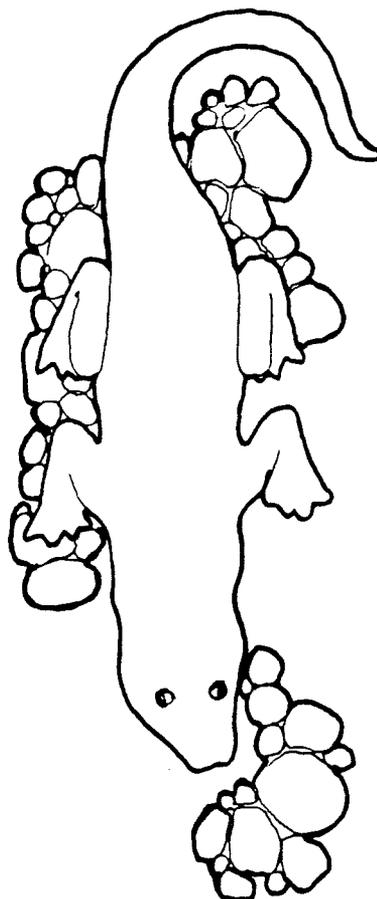
The steamship came into its own when Sir Charles Parsons, an English engineer, perfected an engine that replaced the less efficient pistons with revolving turbines. In 1897, officers of the British navy stood agape at a review in Spithead anchorage while Parsons' experimental ship *Turbina* whisked past them at almost 40 miles per hour.

- I. It became clear that steamships would replace sailing ships when
  - a. Parsons invented the turbine.
  - b. the *Clermont* steamed up and down the Hudson.
  - c. the *Savannah* steamed across the Atlantic.
  - d. the *Turbina* traveled 40 miles per hour.
  
- II. Robert Fulton launched his first successful steamboat in the year
  - a. 1783.
  - b. 1803.
  - c. 1807.
  - d. 1819.

## 6. THE ALLIGATOR

Compared to his wild, aggressive cousins, the crocodiles, the American alligator is a gentleman towards people, even though it can roar and hiss—and look—like a dragon. In captivity, the alligator, unlike the peevish crocodile, seems to ignore humans or even regard them with amused tolerance. A relaxed alligator seen in profile appears to be grinning.

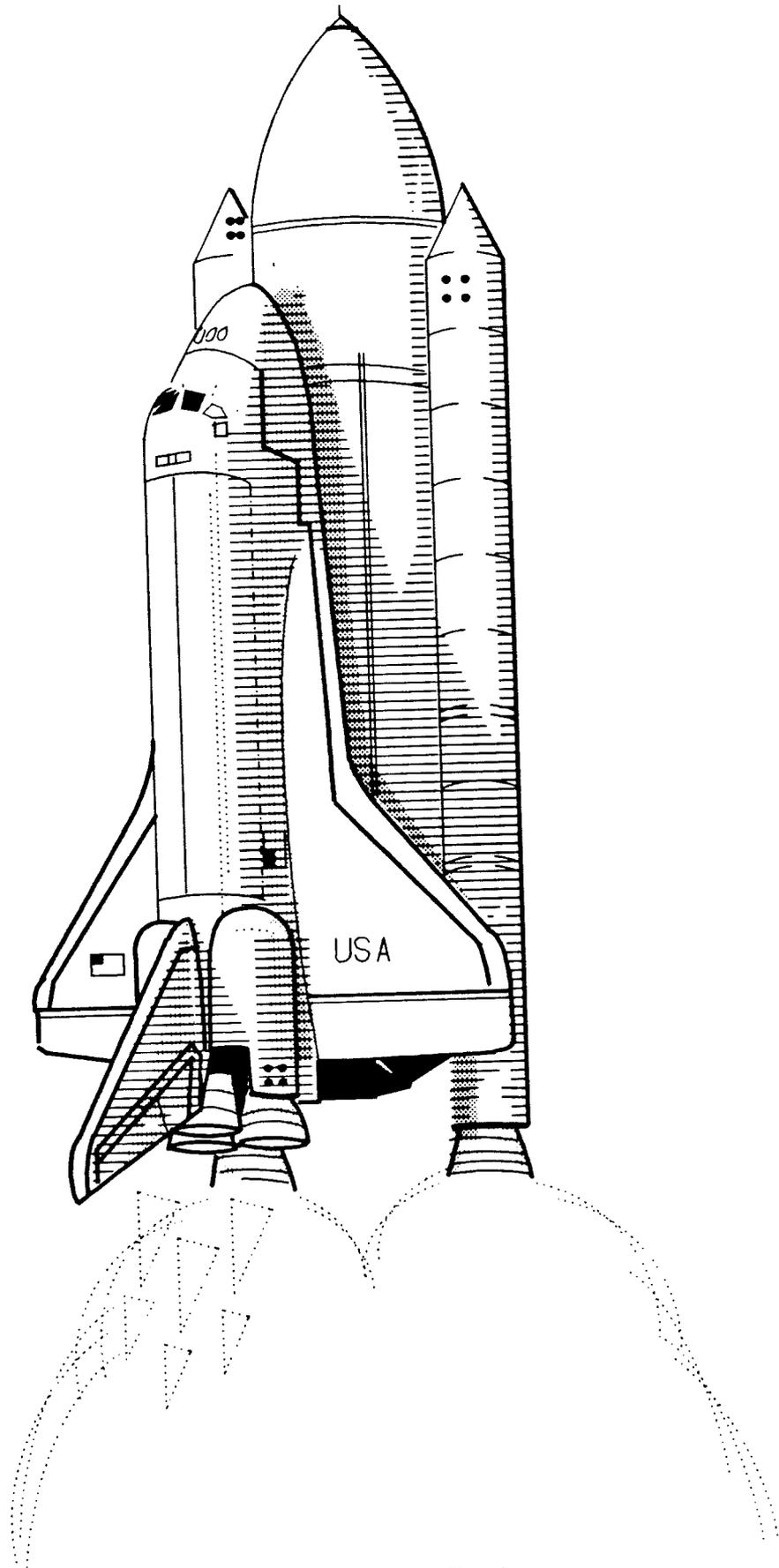
At Florida alligator “farms,” where its tough appearance makes tourists shudder, it even submits to wrestling. A strong young man will tussle one out of a pond and onto a float by first throwing it on its back and then gently massaging its belly until the ‘gator is “hypnotised,” and goes limp. No crocodile would stand for such treatment.



- I. The alligator can be described as being
  - a. a vicious man-eater.
  - b. fearful of humans.
  - c. mild-mannered, despite his appearance.
  - d. unresponsive to human attempts to annoy him.
  
- II. By rubbing its belly one can
  - a. enrage a crocodile.
  - b. capture a wild crocodile.
  - c. stimulate an alligator to wrestle.
  - d. calm an alligator.

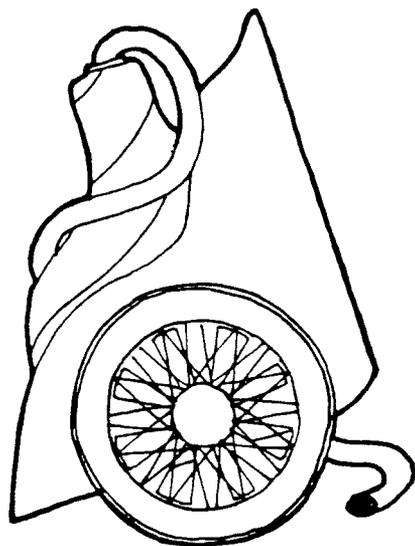
Appendix B

Posttest



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## 1. ANCIENT FIRE FIGHTING



It may seem surprising, but the fact is that the fire engine goes back to the time of Christ. Caesar Augustus (63 B.C.–14 A.D.) formed the first fire department in Rome. Seven hundred firemen lived in firehouses throughout the city. They used a wheeled machine which squirted water on fires. This “water squirt” was a huge syringe. The bulb may have been as long as a man’s

body, and it was squeezed by means of a giant screw turned by a fireman. Such squirts—and even hand syringes three feet long—were in use when the Great Fire swept London in 1666. The hand squirts were held by two firemen while a third worked the plunger—much as you push the plunger in a garden spray gun today. It took the London fire—and great fires in other growing cities—to awaken people to the need for better equipment.

1. According to the author

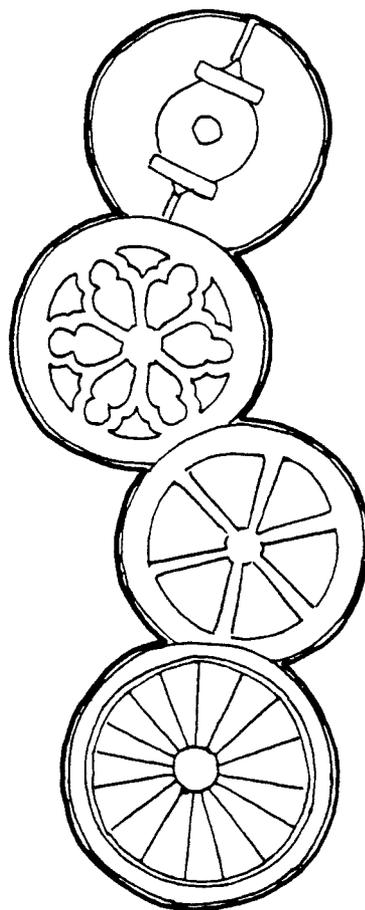
- a. water pumps are ancient fire fighting tools.
- b. the Great Fire must have killed a lot of people.
- c. the water squirt was an unsuccessful fire hose.
- d. fires will never be prevented no matter what measures are taken.

2. Which of the following is not true?

- a. The water squirt was used only in Rome.
- b. Fire engines go back to the time of Christ.
- c. Caesar formed the first fire department in Rome.
- d. A water squirt is a huge syringe.

## 2. THE BIRTH OF THE WHEEL

Fragments of ancient cultures indicate that the wheel was probably developed in logical steps. From rollers or logs, which were very likely the first wheel-like devices, solid wheels evolved, which were little more than chunks of round tree trunks on a fixed axle. After centuries of bumping and wobbling on the massive, solid wheels, hub and spokes were introduced, making it possible to construct wheels in sections. As wheels turned faster, they wore faster and became lopsided. Metal came into common use to sheath the axle from the grinding wear of wheel action. Then "tires" of wood or copper were devised to stand up better under the rigors of travel.



- I. As time passed, wheels became
  - a. lighter and less durable.
  - b. faster and heavier.
  - c. stronger and lighter.
  - d. heavier and more durable.
  
- II. The development from the first wheel-like devices to the copper wheel occurred over
  - a. several centuries.
  - b. one hundred years.
  - c. fifty years.
  - d. one century.

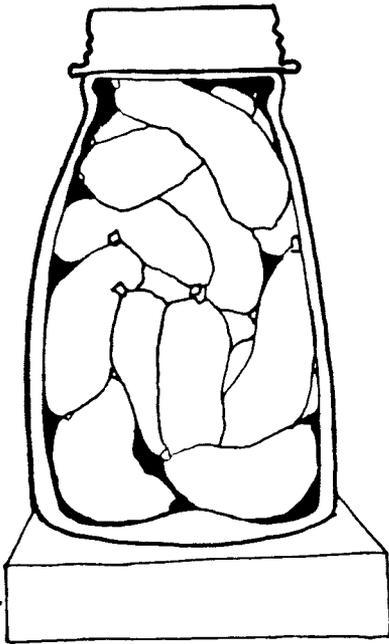
There's no doubt that primitive mankind first trod the world without the benefit of clothing. Historians suggest that thousands, perhaps millions of years passed before animal skins became fashionable. Then, sometime in the dim past, man discovered that the hair of certain animals pressed together stayed together. The fabric known as felt replaced animal skins. No one knows the age of felt—only that it was in use long before Neolithic man learned how to weave cloth a mere twelve thousand years ago.

The manufacture of felt is simple. Seen through a microscope, the hair of many animals appears as a barbed strand, the barbs all pointing toward the tip of the hair. When a number of hairs are pressed together, those which lie in opposite directions interlock barbs and resist efforts to pull them apart.

Legend has it that St. Clement (patron saint of felt makers) discovered felt when, at the beginning of a long journey, he put carded wool between his feet and the soles of his sandals. When he reached his destination, he found no carded wool in his sandals. The wool had been compressed into felt.

- I. Before the invention of felt, man was forced
  - a. to wear clothes of woven fabric.
  - b. to swing naked through the trees.
  - c. to wear sandals made of carded wool.
  - d. to wear the skins of animals.

- II. The manufacture of felt utilizes
  - a. a chemical reaction between wool and leather.
  - b. pressure applied over a period of time.
  - c. the peculiar physical characteristics of some animal hairs.
  - d. the wool carder and the microscope.



It was Thomas Jefferson who wrote:

“On a hot day in Virginia, I know of nothing more comforting than a firm, spiced pickle, brought up trout-like from the sparkling depths of that aromatic jar below stairs in Aunt Sally’s cellar.”

The common yen for pickles that has existed since the earliest records of man, although the result of his more capricious taste buds, is not entirely without benefit. Recent studies show pickles to contain vitamins A, B<sub>1</sub>, B<sub>2</sub>, and best of all, generous quantities of vitamin C, a substance most essential to good health.

It must have been instinct or good luck that guided explorers during the Middle Ages to stock heavily with pickles during those long voyages into the unknown, voyages often plagued with attacks of vitamin deficiencies such as beriberi and scurvy.

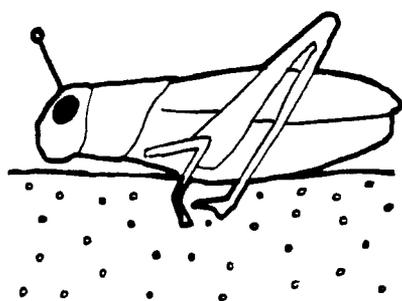
**I.** Pickles are discussed primarily to show that they

- a. were enjoyed by Thomas Jefferson.
- b. are healthful as well as tasty.
- c. were used to fight scurvy.
- d. have been around for many years.

**II.** One thing which is not said about pickles is that

- a. in excess, they cause scurvy.
- b. they were enjoyed by Thomas Jefferson.
- c. they contain four important vitamins.
- d. they were eaten even during the Middle Ages.

## 5. PLAGUE ACROSS THE LAND



The locust is perhaps nature's most awesome example of the collective destructive power of a species which, individually, is practically harmless. An adult locust weighs a maximum of two grams—it takes over 225 to outweigh a can of beans. The destructive power is based on two facts. One, each locust can eat its own weight daily. Two, the moving swarm may carpet the ground with anywhere from 30 to 60 locusts a square yard; therefore, a square mile will typically contain from 100 million to 200 million of the creatures. Seldom, furthermore, will a swarm occupy a mere square mile; swarms more than 400 square miles in area have been recorded. A swarm that size weighs more than 80,000 tons and numbers around 40 billion insects eating the weight of the *Queen Mary* every day it is on the move—and it never stops. As small a number of locusts as one million—two tons of locusts!—takes a tremendous toll and each day eats as much as 20 elephants or 500 people. And their voracity is not only in numbers; pound for pound the locust eats 60 to 100 times as much as a human being.

### I. Locusts

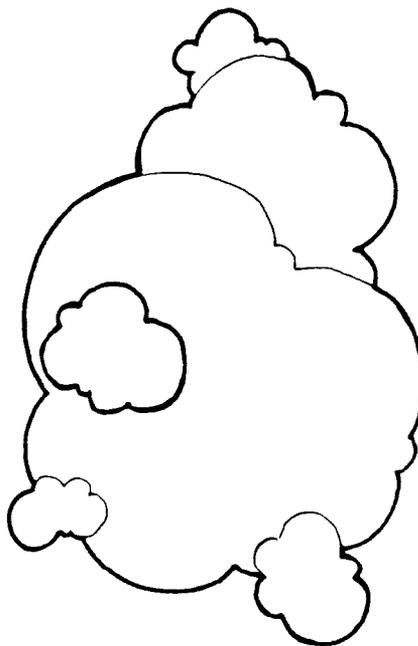
- a. existed only in the Bible.
- b. are extremely destructive in swarms.
- c. ate the *Queen Mary* in one day.
- d. eat as much as twenty elephants.

### II. A locust

- a. can fly over long distances.
- b. always travels in swarms.
- c. is no larger than a bean.
- d. can eat its own weight daily.

## 6. THE THUNDERHEAD

When nimbus and cumulus clouds get together, nature stages one of her most masterful melodramas—starring the *cumulonimbus* or “thunderhead.” The thunderhead, the prima donna of all the rain clouds, is a turbulent, anvil-shaped mass of wind and water vapor often five or six miles tall. Blue, green, black, and purple towers rise and fall within it, illuminated by streaks of lightning. At its base, dark grape-like clusters of clouds boil and bubble, and in certain sections of the world, particularly the midwestern United States, these clusters foreshadow the birth of the most villainous of all storms: the tornado.



- I. The best general statement giving the sense of this passage is that
- the cumulonimbus cloud is very turbulent.
  - different clouds combine easily.
  - the most villainous of all storms is the tornado.
  - the cumulonimbus cloud is composed of wind and water vapor.
- II. This passage does not say that the cumulonimbus cloud is
- a combination of cumulus and nimbus clouds.
  - as dangerous as the tornado.
  - full of blue, green, black and purple towers.
  - often five or six miles tall.