TACKLING THE ACT SCIENCE REASONING TEST

STEP BY STEP PLANS FOR SUCCESS

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THERE ARE 3 TYPES OF PASSAGES

- Charts and graphs
- Experiments
- Fighting scientists (conflicting viewpoints)

You have 35 minutes to complete 40 questions.

Each passage has 3 types of questions

- Look it up – use a specific sentence, graph etc to get the answer – fairly simple
- Why? – require more analysis. Have to look at more than one thing - form relationships, make predictions.
- What if? – need to look at the big picture. Need to relate things learned in the passage to things NOT discussed in the passage.

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Step by Step game plan

Step 1 – Scan the passage and identify it.

Is it charts and graphs?

experiments?

fighting scientists?

If charts or experiments – May not need to read intro – can scan it.

If fighting scientists – read intro.

Step by Step game plan

- Step 2 – Identify the type of question being asked.

is it Look it up?

Why – analysis?

What if?

Step by Step game plan

Step 3 – Guesstimate

You can get some answers to questions quickly by guesstimating the answer. This is especially true on charts and graphs passages.

Step by Step game plan

Step 4 – Use the process of elimination

Sometimes its easier to find the CORRECT answer by eliminating all the wrong or “stupid” answers.

A Closer Look at Charts and Graphs

Specific tips:

1. What are the variables?
2. What are the units?

(remember you may not need to read the intro paragraph at all to answer the questions)

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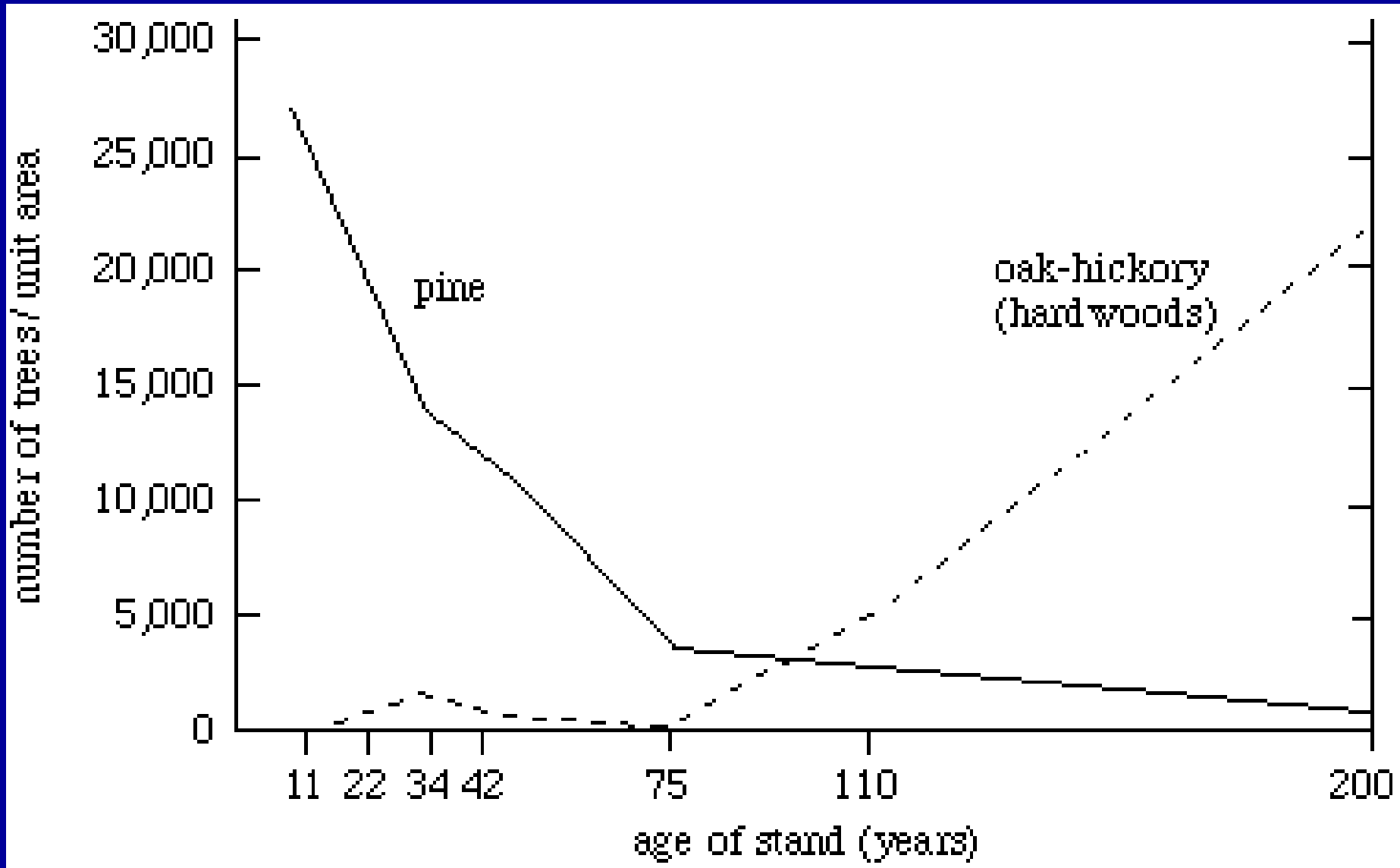
30,000
25,000
20,000
15,000
10,000
5,000
0
number of trees/ unit area
pine
oak-hickory
(hardwoods)
11
22
34
42
75
110
200
age of stand (years)

Figure 3

QUESTION 1

On the basis of the data presented, approximately 80 years after the abandonment of cropland, the land would contain:

A. pine seedlings only.

B. oak-hickory hardwood forests only.

C. early invading species like horseweed, aster, and broom sedge.

D. large pine trees with an understory of hardwood trees.

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QUESTION 2

According to the information in Figure 3, a 150-year-old climax community would contain oak and hickory trees with a density of approximately:

F. 3,000 trees per unit area.

G. 5,000 trees per unit area.

H. 15,000 trees per unit area.

J. 20,000 trees per unit area.

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QUESTION 3

On the basis of the data depicting the gradual change from pine forest to an oak-hickory forest, after 100 years, as the density of the pine trees:

A. increases, the density of the oak-hickory trees increases.

B. increases, the density of the oak-hickory trees decreases.

C. decreases, the density of the oak-hickory trees increases.

D. decreases, the density of the oak-hickory trees decreases.

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A Closer look at Experiment Passages

Specific tips:

1. Find the objective. *What* are they studying?

This is usually stated at the beginning or the end of the intro paragraph.

<u>UNDERLINE IT!</u>

A Closer look at Experiment Passages

Specific tips:

2. Identify the method of research

How did they study it?

Scan the experiments, look at variables, look at differences in procedure etc, make notes.

A Closer look at Experiment Passages

Specific tips:

3. Identify the results

What did they find?

Make notes about the results of each experiment.

* Most of the questions will direct you to the specific experiment you need to look at.

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Examples of Experiments

"A laboratory experiment was conducted to determine whether the lack of sunlight influences photosynthesis. 8 potted flowers were randomly selected and divided into 2 groups labeled groups A and B. The plants were then subjected to different light conditions and examined a week later."

Find the objective. *What* are they studying? (Underline it)

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Examples of Experiments

Group A – “These plants were exposed to sunlight for the duration of the study, these plants were green in appearance and produced glucose”

Group B – “These plants were kept in the dark. At the end of the study, they were yellow in appearance and didn’t produce glucose”

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Examples of Experiments

Identify the method of research - *How* did they study it?

Scan the experiments, look at variables, look at differences in procedure etc, make notes.

Examples of Experiments

Group A notes:	Group B notes
Sun	No sun
Green	Yellow
Glucose	No glucose

What are the variables?

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Examples of Experiments

Identify the results

What did they find?

Hmmmmmmmmmmmmmmmmmm

What can you predict about the fate of the flowers?

A Closer Look at Fighting Scientist Questions

Specific tips:

1. Identify the disagreement

Look for the main point of the readings, identify the differences in their viewpoints.

<u>Underline!</u>

A Closer Look at Fighting Scientist Questions

Specific tips:

2. Identify the question type

1. Look it up? – answer is in one part of the passage

2. Why? (analysis) – need to integrate info from all the info given May need to identify a strength or weakness in the hypothesis. Can look for assumptions etc

A Closer Look at Fighting Scientist Questions

- What if?

Requires you to make predictions based on the info given. Sometimes will even give you NEW info.

These questions often use the word "suppose" in the question.

They want you to see the big picture.

References

The Princeton Review, Cracking the ACT 2007 Edition, Random House Inc, New York 2007.

Check out:
http://www.actstudent.org/sampletest/science/sci_01.html

For sample questions and answers