

4th Grade

Put the animals in the right order to show a food chain.

Which picture shows that air has weight?

7th Grade

In which of the following will the bulb light?

Which picture is an example of a seed that adapts to eating hard seeds?

10th Grade

The diagram below is of a typical plant cell. Use this diagram to answer the following questions.

The structure labeled with the number 4 is called the:

- nucleus
- vacuole
- chromatin
- cell wall

The structure labeled with the number 1 is called the:

- chloroplast
- nucleus
- mitochondrion
- vacuole

When salt water is dried but salt remains in the dish. This is evidence that salt water is:

- a molecule
- a mixture
- a compound
- an element

Above are questions similar to those asked of fourth, seventh and tenth graders in the science portion of last fall's Michigan Education Assessment Program tests. State education department officials will not release exact questions from the test.

but said these sample questions reflect the way that actual test questions determine if a student has mastered an objective. MEAP science tests were done statewide for the first time

last fall after being administered on a voluntary basis the year before. Results were much lower than scores students are currently achieving on the math and reading portions of the test.

MEAP Science Scores

District	4th grade	7th grade	10th grade
Avondale	42.7	25.0	47.1
Birmingham	72.4	50.9	47.6
Bloomfield Hills	63.2	59.1	53.4
Farmington	59.9	45.2	35.2
Rochester	65.7	49.5	37.0
Southfield	66.2	29.0	28.4
Troy	59.3	52.6	40.2
Walled Lake	43.7	35.6	19.3
West Bloomfield	65.3	43.0	31.1
County Totals	49.7	35.7	27.3

Here is how Oakland County school districts fared on the MEAP science tests taken last fall. Figures reflect the percentage of students who passed at least 75 percent of the test.

Science test spurs questions

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She said scores not only reflected a first-time test, but that the results were "reflective of a poor test."

"I feel it's important we get a yardstick every so often," said Doug Cooper, science coordinator for the Farmington district.

Although "the science MEAP scores were dropped out of a vacuum" without background comparison, he views the test as "an opportunity to get new directions and measures."

"Gross scores probably aren't as meaningful as comparing them by item," he added.

THE CATEGORIES tested included life science, earth and space science, physical science, science technology and society, and science process.

Cooper called the process category one of the most important and said it reflects the way science should be taught.

"We need to look at critical thinking and not worry about memorizing the facts," he said. The application of science is more important.

State education officials also announced a three-phase plan Tuesday to help schools use and interpret test

results to help development classroom material meet MEAP test objectives, and for professional development.

Science should be taught in a "hands-on" environment to take advantage of a child's "natural inquisitiveness," he said. "A teacher not confident with the course content" may rely on more traditional methods.

Cooper agrees. The Farmington district has implemented an intensive science program at the elementary level, which stresses the hands-on concept. The board of education wants to place science rooms in each elementary school.

"Right now, we're working very hard on (reviewing) the curriculum," Cooper said. "It's great to have good guidelines out there. We have to look at our community and teach what is responsible."

ROEBER AGREED that districts should revise what they have.

"I think the message to school districts is that rather than throwing out their program and starting over, they should instead review, change and modify their program."

Roeder also cautioned, against comparing one school district's results against another. He said a school district that did relatively

well should still be concerned about those students who failed the test.

"We report scores so school districts know how much work there is to be done," he said.

The science portion of the MEAP will only be given on a random basis and to those schools that volunteer for it next year, said Roeder. He said the decision was made as a "matter of strategy" and because there is a concern that there is too much testing.

He dismissed a rumor that a social studies test will be given next year, but said there will be random sampling tests given in health, science and career development given in about 165 of the state's 3,300 public school buildings.

In a matter relating to science curriculum, state Superintendent of Education Phillip Runkel said Tuesday that it will be increasingly difficult to attract qualified science majors from college ranks, when \$20,000 teaching salaries are compared with \$35,000 wages in the private sector.

The problem will become pronounced as more teachers take advantage of early retirement incentives, said Runkel, who noted that the state's colleges produced only nine physics teachers last year.

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