EDUCATION

New Math Program

➤ A MATHEMATICS PROGRAM that should be studied by all secondary school students capable of future college work has been outlined. The improved program is described in a 63-page report by the commission of mathematics of the College Entrance Examination Board, New York, entitled "Program for College Preparatory Mathematics."

The traditional curriculum, the commission reported, fails to reflect adequately the spirit of contemporary mathematics. In order that the school and college curricula meet the needs of mathematics itself, and of its applications, it said, there must be a change.

"College entrance requirements should be restated in broad and significant terms designed to encourage schools to introduce curricula and courses oriented toward the development of mathematical power, insight and understanding, rather than toward coverage of formalized material."

As many as possible of the college-capable must be urged to study challenging mathematics for four years in high school, the report said. None of them should study mathematics for less than three years, and the most gifted should accelerate their studies in mathematics so as to undertake the Advanced Placement Program.

Among the major proposals outlined by the commission were: strong preparation in concepts and skills for college math at the level of calculus and analytic geometry; understanding of the nature and role of deductive reasoning, in algebra as well as in geometry; appreciation of mathematical structure or patterns; judicious use of unifying ideas, sets, variables, functions and relations; treatment of inequalities along with equations; incorporating some coordinate geometry, solid geometry and space perception with plane geometry; introduction in grade 11 of fundamental trigonometry, centered on coordinates, vectors and complex numbers; emphasis in grade 12 on elementary functions, polynomial exponential, circular; and recommendation of additional alternative units for grade 12; either introductory probability with statistical applications or an introduction to modern algebra.

Science News Letter, April 25, 1959

ENGINEERING

100-Mile Roadway to Be Dug in Greenland Ice

➤ A 100-MILE covered highway will be gouged out of the Greenland ice cap to supply an isolated Army camp now under construction.

The roadway will be cut 28 feet deep in the Arctic cap and will be wide enough, 22 feet, to handle two lanes of traffic.

Vehicles probably will be electric-driven in order to eliminate the danger of carbon monoxide fumes from internal combustion engines. At least two modes of electric transportation are under consideration: a rail system, and a cable system by which cars would be pulled over the roadbed on sled-like runners.

Robert R. Philippe, U. S. Army Corps of Engineers' research and development division, said another system would entail making a solid roadbed out of pressed snow briquettes. Wheeled vehicles would be directed by shallow chutes in the roadbed.

Mr. Philippe estimated roadway construction could move along at four miles a day. The cost would be a small fraction of that of concrete highways, which cannot be built much faster than a mile a week. His estimate is based on experience with some short experimental roadways constructed in Greenland.

A parade of Peter snow millers will be used in the construction, the first one digging out a trench about five feet deep and seven feet wide. Two more milling machines will follow, doubling the depth of the trench and under-cutting it along the sides. The next two machines will deepen the under-cut. Then two groups of three machines will make a second under-cut the full width of the roadway.

The seven-foot opening along the top of the roadway will be covered with metal roof forms. Pulverized snow spewed out by the millers will be shoveled over the forms. When the "Peter snow" hardens, the forms will be removed and the roadway finished.

Sunlight filtering through the snow roof not only will provide more than adequate lighting, but will color the area with blues and purples.

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KANGAROO CLUTCH—Kangaroos and wallabies, the latter a small species of kangaroo, are abundant in many parts of Australia and Tasmania. They are also found in Papua and the Aru Islands. These marsupials, except the tree wallaby, graze on hills and plains, hopping on hind legs with the aid of their strong tails. They have been known to bound 25 feet at speeds of more than 25 miles per hour. The young are only one inch long when born and are suckled in a large pouch in the mother's body.

CONSERVATION

Australia's Kangaroos At Plague Proportions

➤ KANGEROOS HAVE now reached plague proportions in many parts of Australia, threatening livestock and crops.

Six years of open seasons have failed to reduce the kangaroo population, which is now estimated at more than 5,000,000, A. Strom, guardian of fauna for New South Wales, reported.

Neither shooting nor poisoning the animals is practical because of the high cost of ammunition and the danger of harming other animals. Since control, not eradication, is desired, the scientists are not looking for a disease that would kill the kangaroos as myxomatosis has killed rabbits in Australia.

A full-scale biological investigation into the habits of the kangaroo is needed, Dr. J. W. Evans, director of the Australian Museum, said. Scientists should study its breeding and migratory habits, its eating habits and how long it could live without water.

The kangaroo causes damage to fencing, pasture and waterholes in addition to eating crops intended for livestock.

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