



Robots All Around



photo courtesy NASA

Mini Fact:

A robotic arm at the International Space Station can grab a cargo spacecraft and attach it to the ISS.

Have you ever wished you could command a robot to do your chores or finish your homework? Inventors have been dreaming of artificial people for centuries. In fact, Leonardo da Vinci built a mechanical knight more than 500 years ago.



Photo by Erik Miller

Leonardo da Vinci may have built this model of his mechanical knight around 1495.

Today, robots do all kinds of jobs (although the chore-and-homework robot may still be in the future). This week, The Mini Page explores the different ways these mechanical tools are used.

What's a robot?

We think of robots looking like humans, and some do. But in any shape, a robot performs tasks that may be too dangerous, precise or repetitive for humans to do. Robots can be programmed to perform jobs on their own or be guided by humans. Some can make simple decisions.

These complex machines can be used in factories, hospitals, homes and mines. They're used by the military and in space.

Robots in medicine

In hospitals, robots are being used to make surgeries safer, faster and more precise. The Mini Page spoke with a surgeon, Dr. Scott Miller, who works with robots.

In traditional surgery, a doctor makes an incision, or cut, through the patient's skin

to directly reach the area to be worked on. **Laparoscopic** (lap-ahr-oh-SKAHP-ick) surgery involves the surgeon cutting a few small incisions, then guiding a video camera inside the body along with one instrument at a time.

A 3-D view

Imagine being able to step inside a body and look around. You could turn every which way and see how things are connected.

In robotic surgery, the camera provides a 3-D view of the area being worked on. "It's like you're standing inside the cavity you're working in," said Dr. Miller. The robot can also use three instruments along with the camera. The doctor guides the robot more smoothly than with laparoscopic devices.

"Laparoscopy versus robotic surgery is like the difference between playing foosball and 'Madden,'" Dr. Miller explained.

A doctor sits at a console where he or she sees what the camera sees through a viewfinder. Using control sticks and foot pedals, the doctor can maneuver the camera and several instruments at a time.



Dr. Miller says robotic surgery is easier to learn and doesn't strain the surgeon's eyes, neck and back as much as traditional or laparoscopic surgery.



This robot is used for detecting and defeating roadside bombs in Iraq.

U.S. Air Force photo by Tech. Sgt. Michele A. Desrochers

Military robots

Our military uses robots to find and sometimes disarm bombs that are set to kill soldiers. Robots can also patrol areas that are too unsafe for human soldiers.

Some of these robots can climb stairs, travel over mud or fields, and go through water.

Robots taking over?

Some people worry that soon, robots will do all the jobs and people won't have work. But experts say it's more likely that robots will work *with* people, not *instead* of people.

Most careers probably can't be completely done by robots, but some of the small tasks of those careers can.

Resources



On the Web:

- bit.ly/MProbot
- youtu.be/SajTWY9a0e0

At the library:

- "Time for Kids Explorers: Robots" by Mark Shulman and James Buckley Jr.

The Mini Page © 2017 Andrews McMeel Syndication

Try 'n' Find

Words that remind us of robots are hidden in this puzzle. Some words are hidden backward, and some letters are used twice. See if you can find:



ARTIFICIAL, CAMERA,
DECISIONS, INCISION,
INSTRUMENTS,
LAPAROSCOPIC,
MECHANICAL, MEDICINE,
MILITARY, PRECISE,
PROGRAM, REPETITIVE,
ROBOT, SPACE, SURGERY,
TASK, VIEWFINDER.

D E C I S I O N S A S P A C E
E N I C I D E M M A R G O R P
C I P O C S O R A P A L F K U
Y E K S A T N O I S I C N I T
R S S T N E M U R T S N I C O
E I S V I E W F I N D E R A B
G C L A C I N A H C E M P M O
R E K F B E V I T I T E P E R
U R P U W M I L I T A R Y R E
S P A R T I F I C I A L J A T

Cook's Corner

Spinach Yogurt Dip

You'll need:

- 1 cup plain yogurt
- 1/2 cup reduced-fat sour cream
- 2 cups fresh spinach, chopped
- 1/4 teaspoon dried basil
- 1/4 teaspoon salt-free seasoning mix

- 1/4 teaspoon dry mustard
- 1/4 teaspoon garlic powder
- 1/4 teaspoon cumin



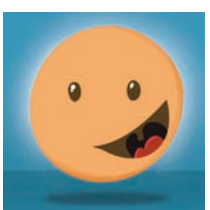
* You'll need an adult's help with this recipe.

What to do:

1. Mix together all ingredients in a medium-sized bowl.
2. Chill to blend flavors.
3. Serve with vegetables as a dip or spread on crackers.

7 Little Words for Kids

Use the letters in the boxes to make a word with the same meaning as the clue. The numbers in parentheses represent the number of letters in the solution. Each letter combination can be used only once, but all letter combinations will be necessary to complete the puzzle.



1. fuel for the car (8) _____
2. visitor from outer space (5) _____
3. it has five fingers (4) _____
4. very smart (4) _____
5. four times four (7) _____
6. very tasty (9) _____
7. where cows eat (7) _____

HA	TEEN	ICI	ND
OUS	LINE	DEL	PAST
EN	SIX	SE	SO
URE	GA	ALI	WI

Answers: gasoline, alien, hand, wise, sixteen, delicious, pasture.

Mini Jokes



Ralph: What does a robot use to shave?
Randy: A laser blade!

Eco Note



Do you recycle aluminum cans at home? Don't forget:
1) Rinse out the cans to keep bugs away.
2) Carefully step on cans to crush them flat. This saves space.
3) Clean aluminum foil, pie plates and frozen food trays can be recycled, too.

adapted with permission from "The New 50 Simple Things Kids Can Do to Save the Earth" by The Earthworks Group, Andrews McMeel Publishing (andrewsmcmeel.com)

Thank You



The Mini Page thanks Dr. Scott Miller, chief of surgery and medical director of the Advanced Laparoscopic and Robotic Surgery Program at Northside Hospital in Cherokee, Georgia, for help with this issue.

Teachers:

For standards-based activities to accompany this feature, visit: bit.ly/MPstandards

The Mini Page © 2017 Andrews McMeel Syndication

Books from The Mini Page are wonderful resources and make great gifts! See all of our Mini Page products at MiniPageBooks.com, or call 844-426-1256 for more information. Mail payment to: Andrews McMeel Universal, Mini Page Books, 1130 Walnut, Kansas City, MO 64106. Include \$4.00 shipping and handling per order.

