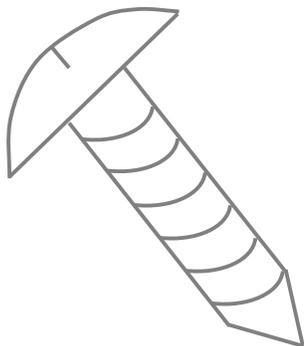
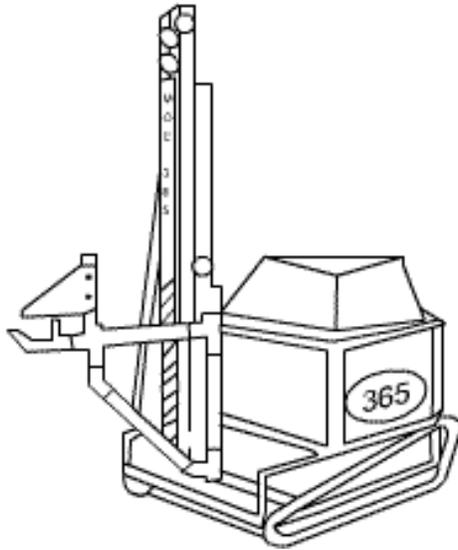
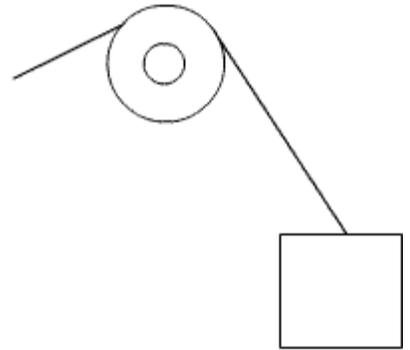
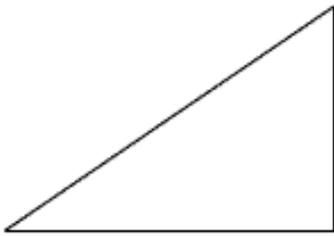
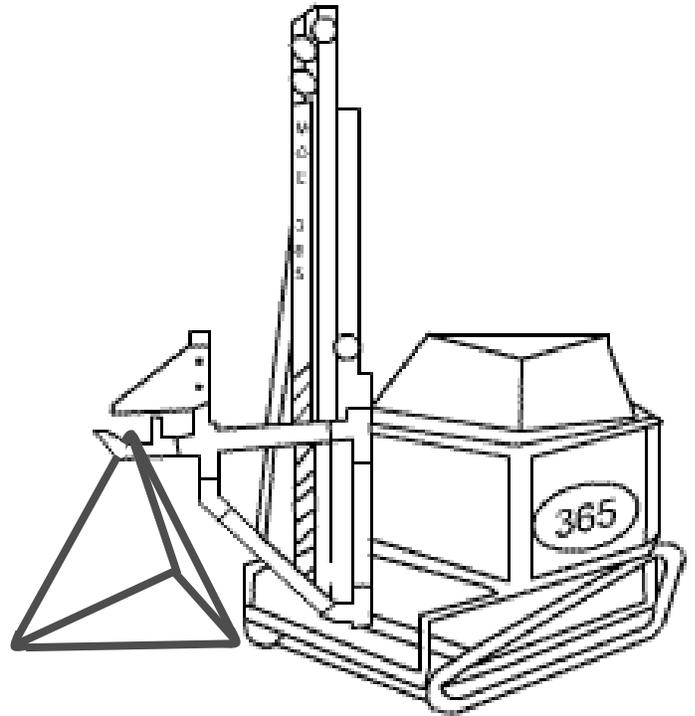
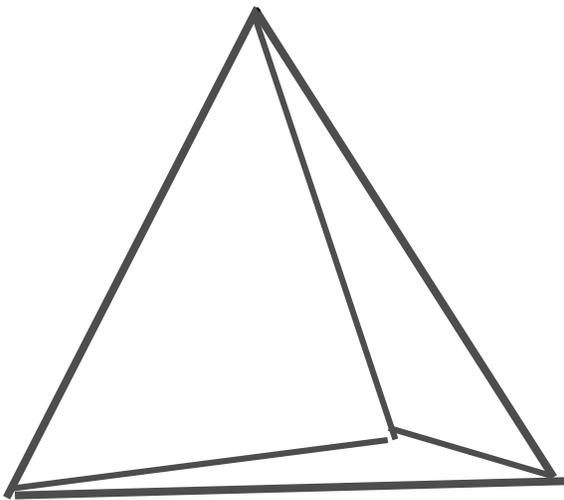


Simple Machines

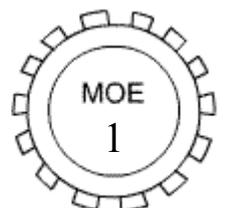
With MOE

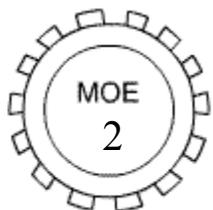
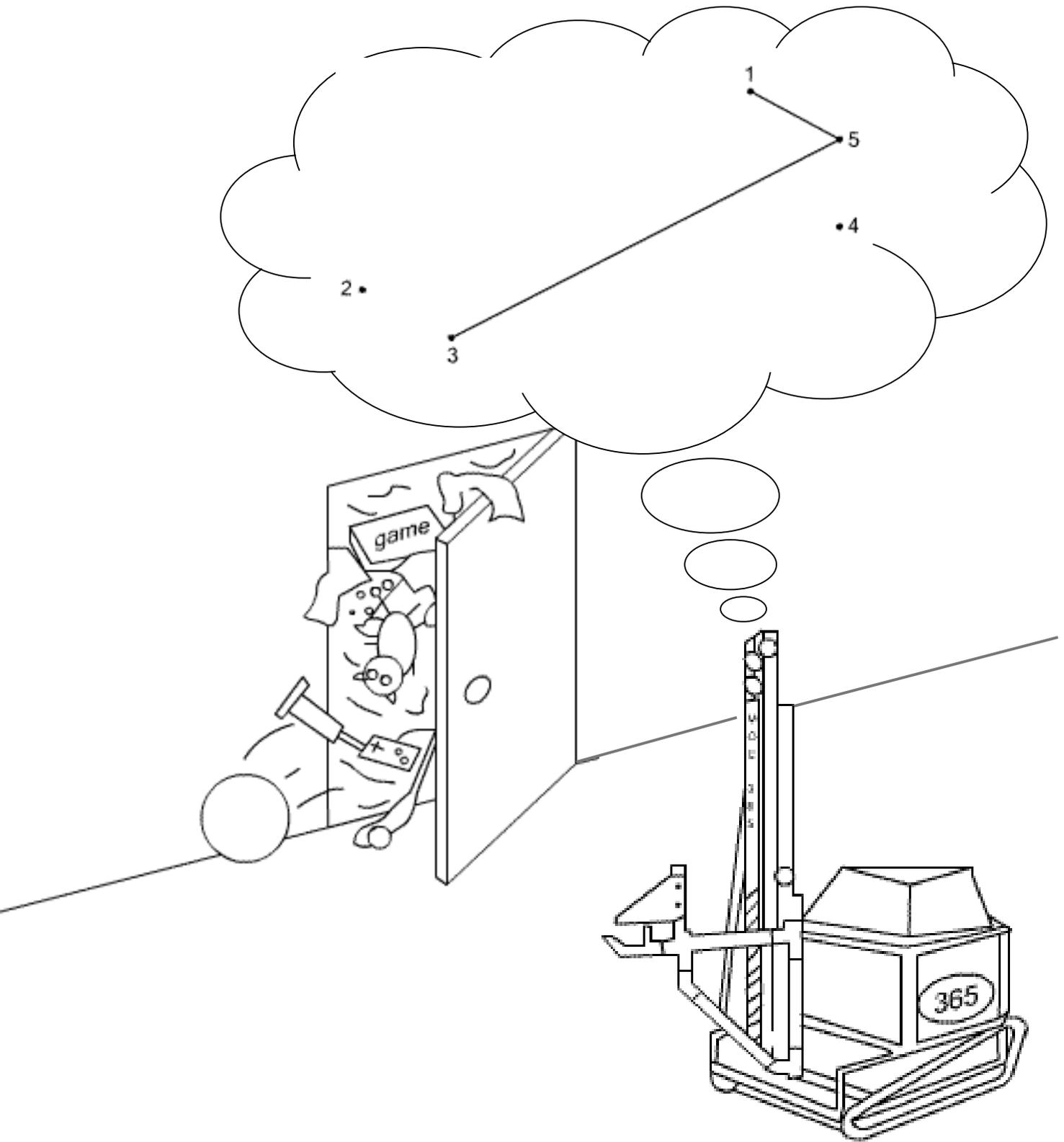


Hi! My name is MOEbius. I was built to play a game where I pick up *tetras* and put them on a goal. Tetras are like hollow *pyramids*.

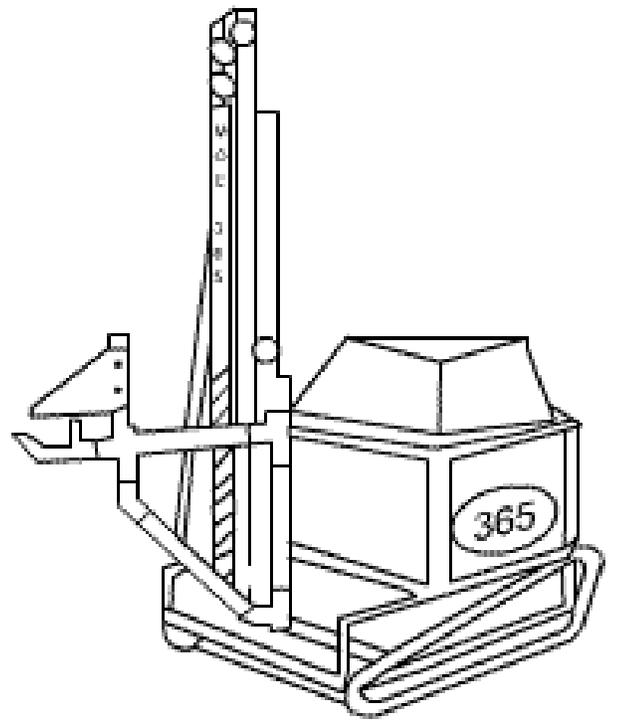
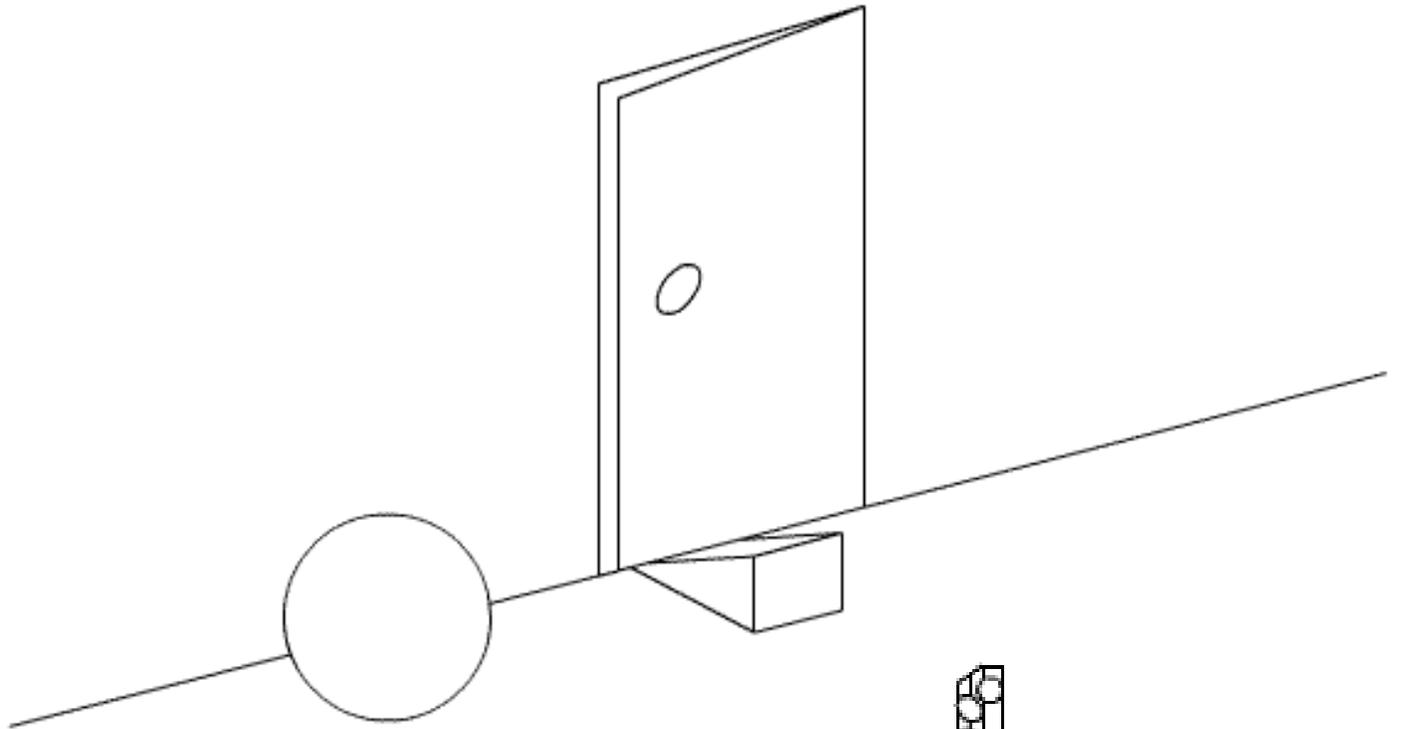


Come with me and learn about simple machines.

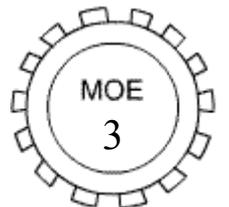




MOEbius wants to go outside and play with his friends, but his closet door won't stay closed. Help MOEbius by connecting the dots!

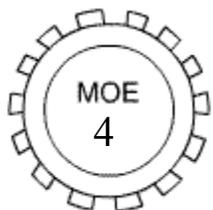
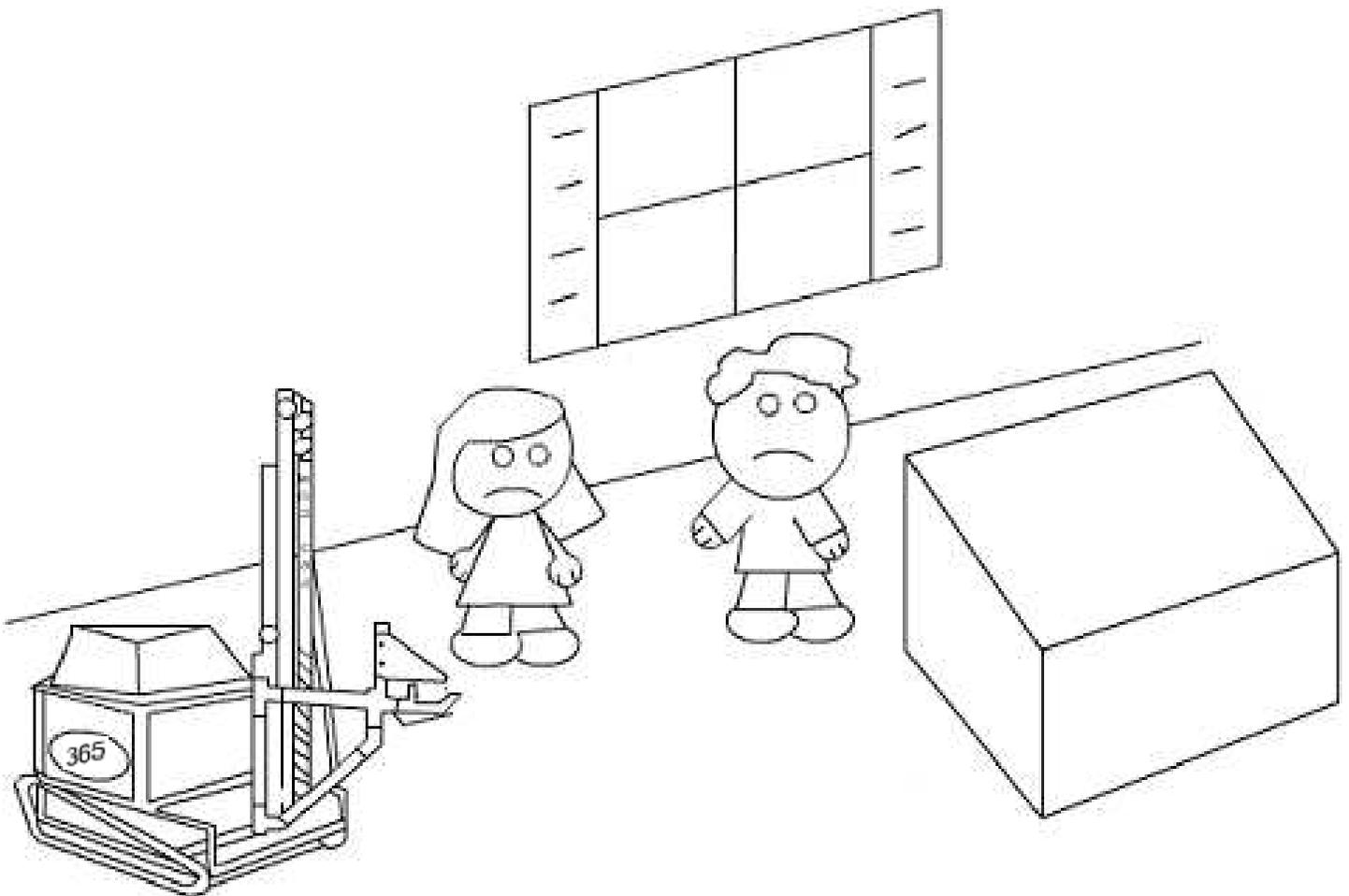


Now MOEbius can go outside and play with his friends because the WEDGE can hold the door shut!

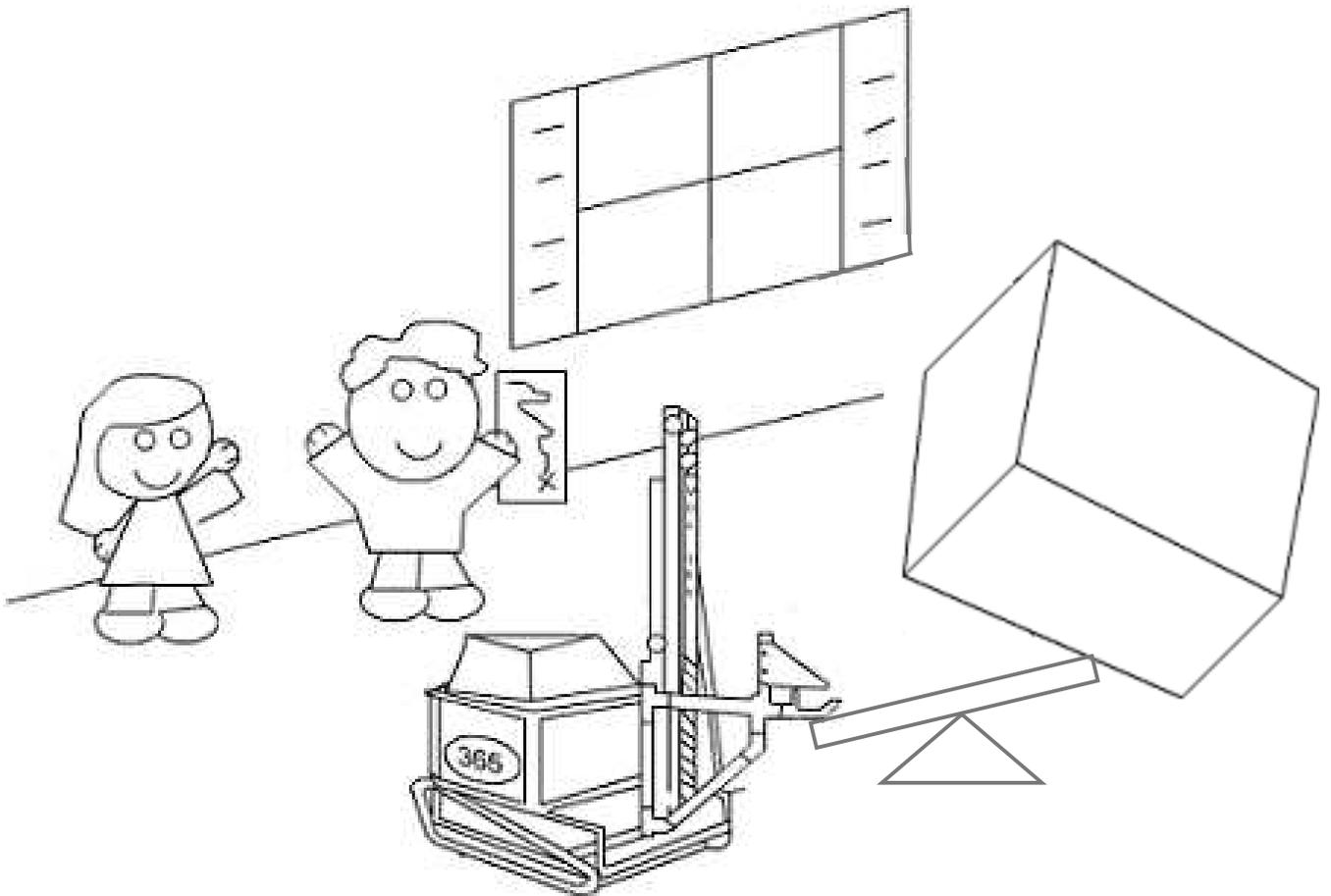


MOEbius and his friends can't lift the box to see what is underneath! Unscramble the word to show them what simple machine can help.

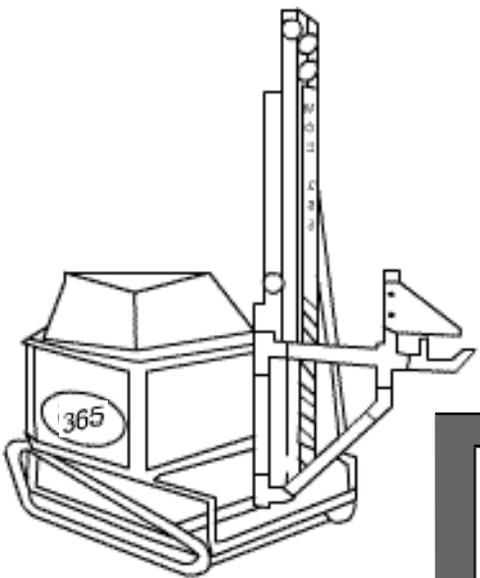
VRELE _____



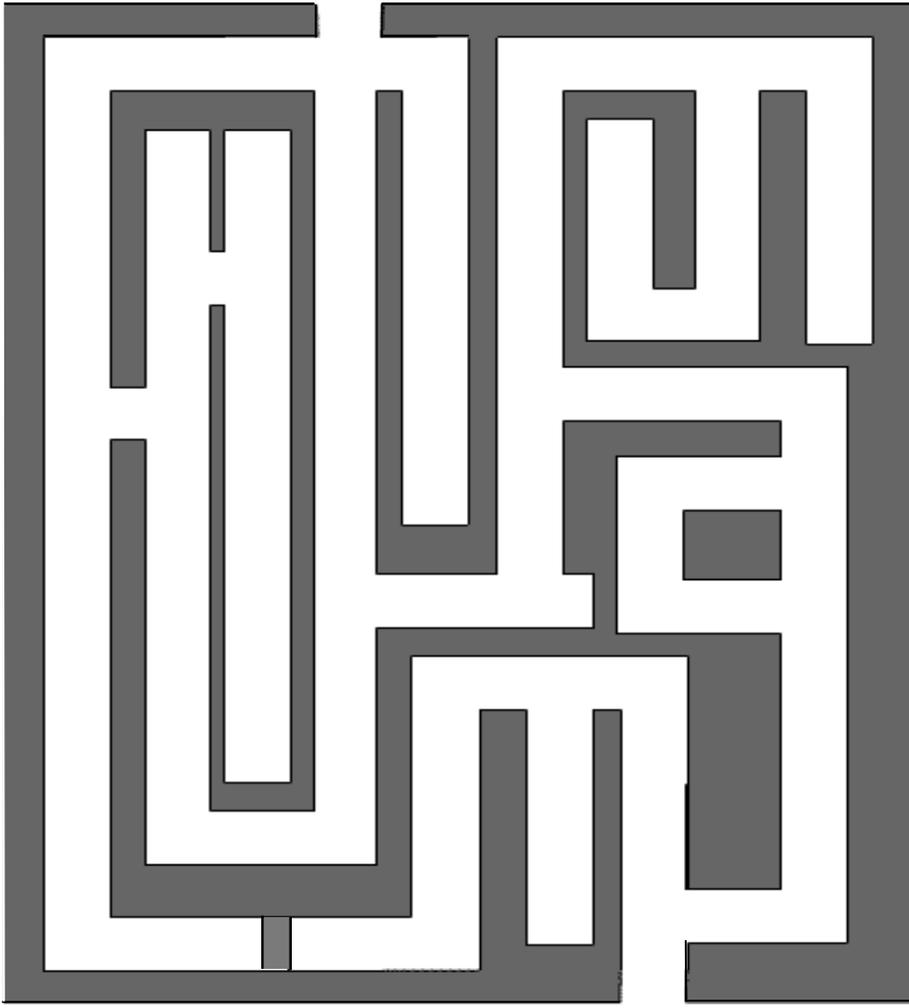
MOEbius and his friends used a LEVER in order to lift the box, and they found a treasure map underneath!



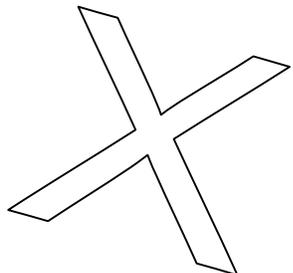
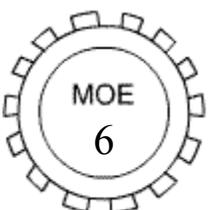
Help MOEbius and his friends follow the treasure map!



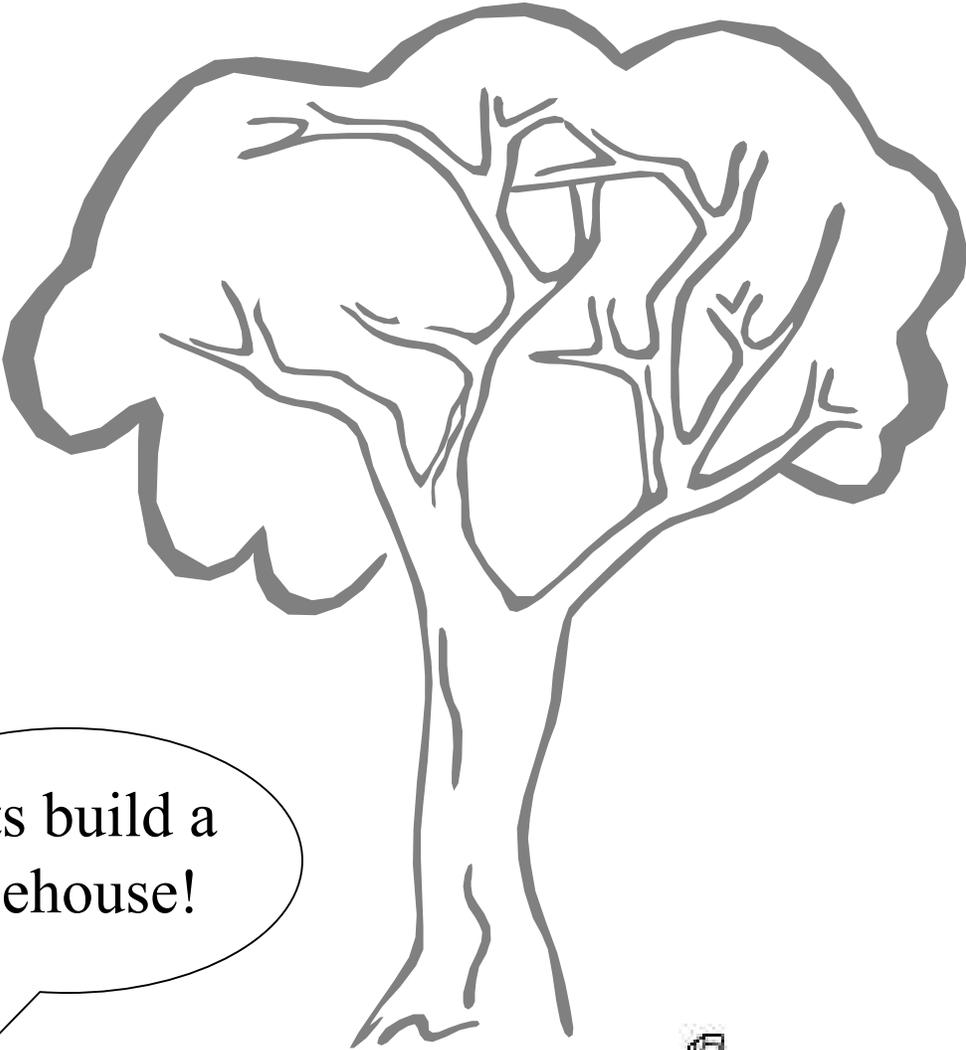
START



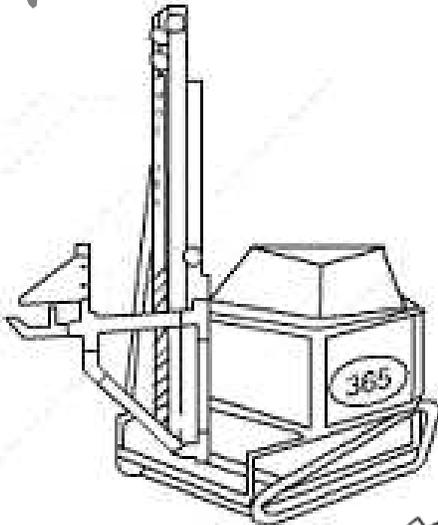
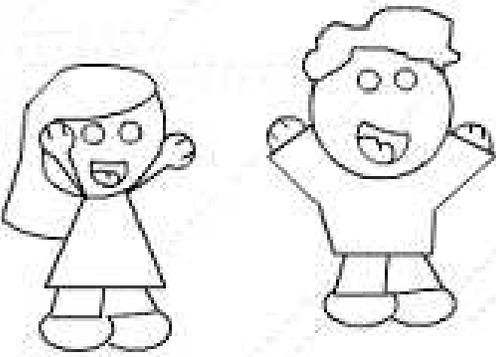
FINISH



The map led to a tree

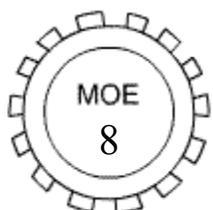
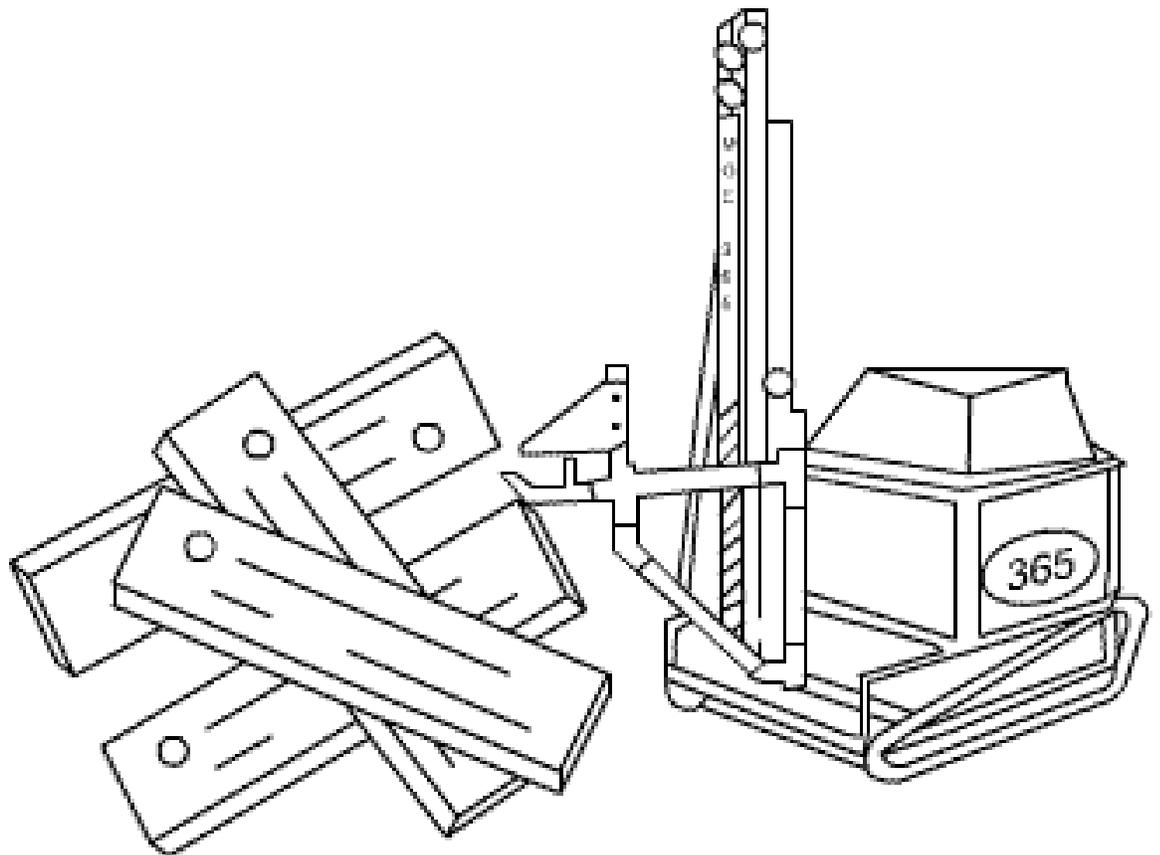
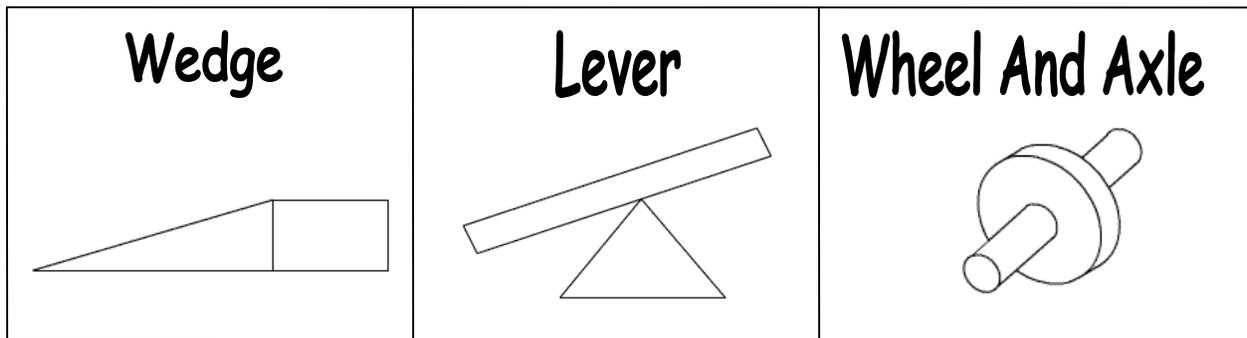


Lets build a treehouse!

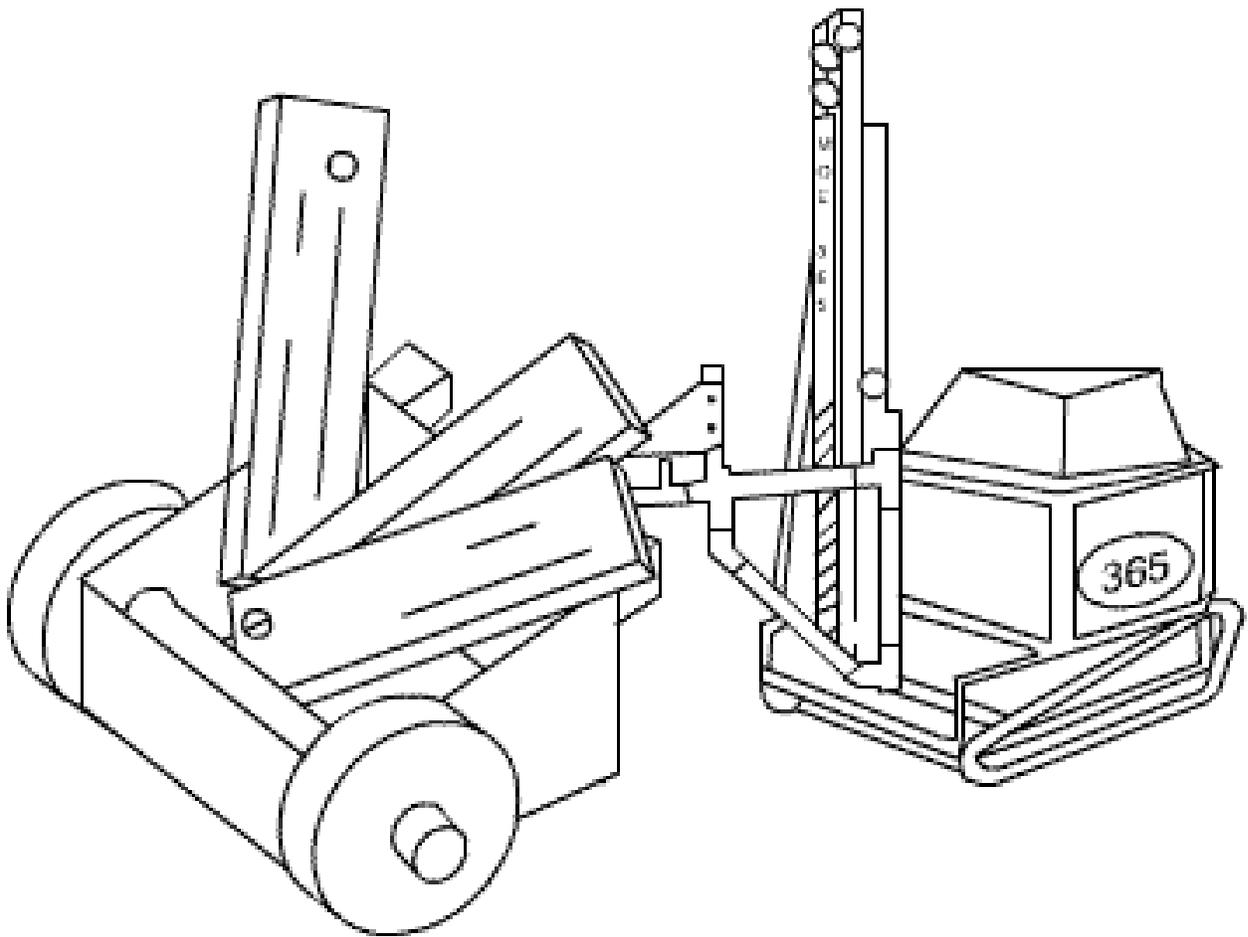


MOEbius found some wood for the tree house, but the wood is too heavy for him to carry all the way back.

Circle the simple machine that can help MOEbius carry the wood back

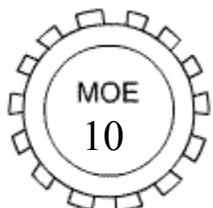
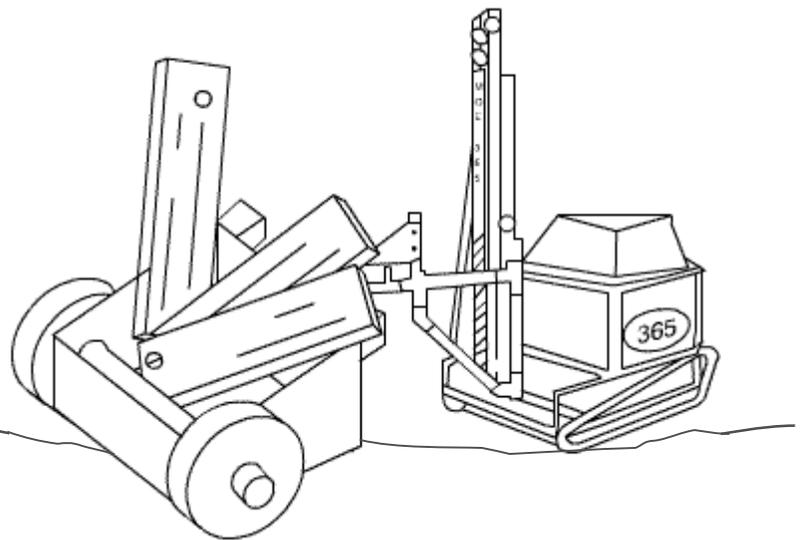
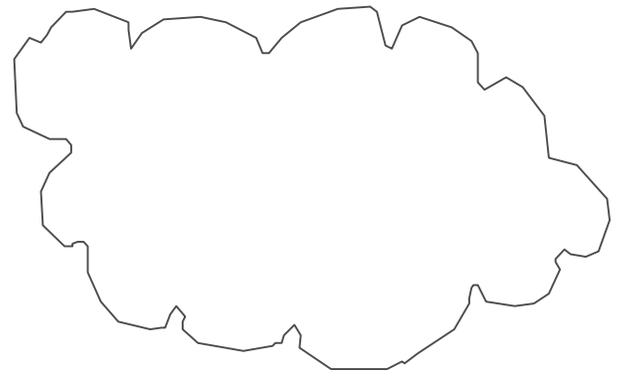
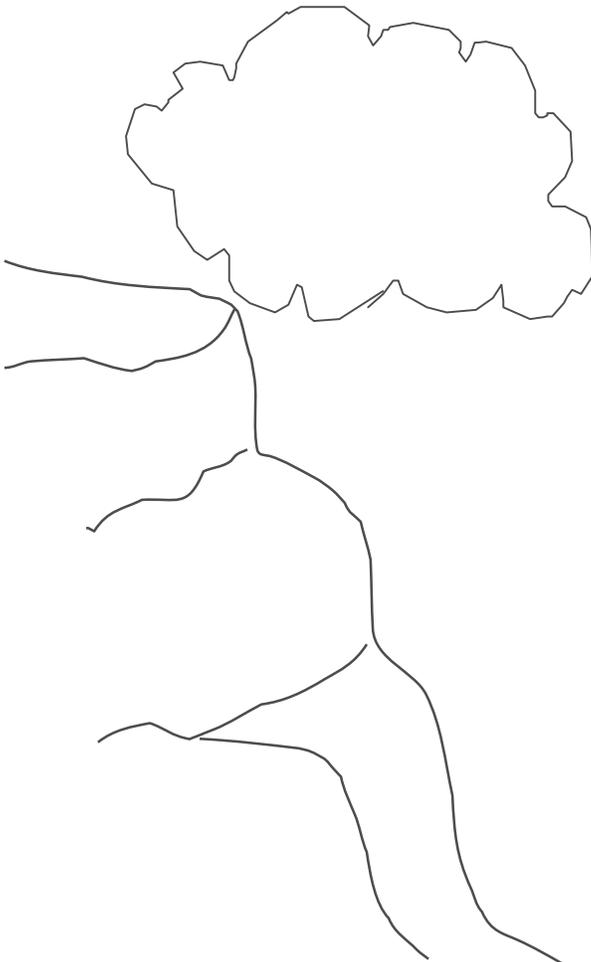


Way to go! MOEbius can carry the wood back to the tree easily by using a WHEEL and AXLE.

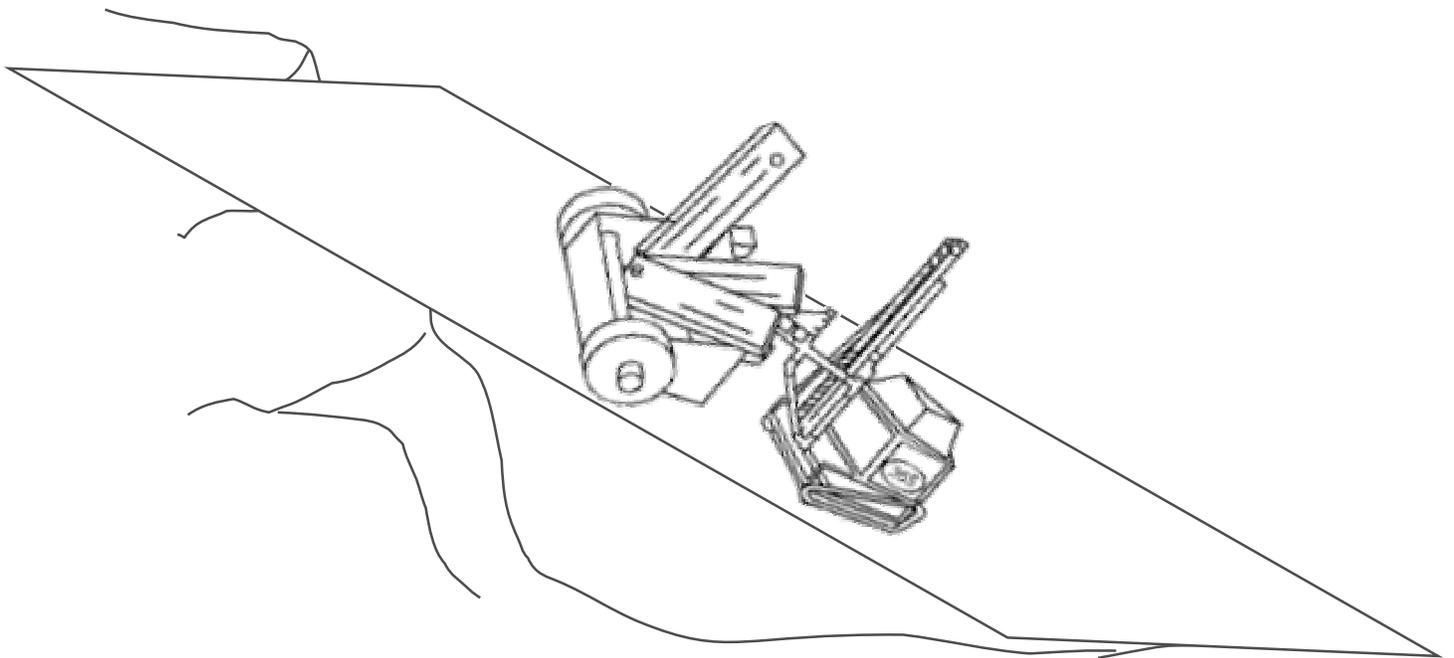
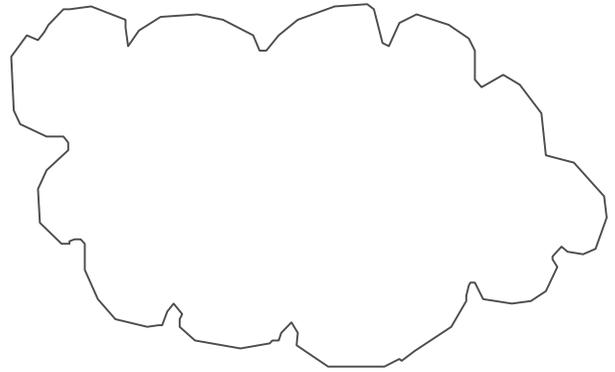
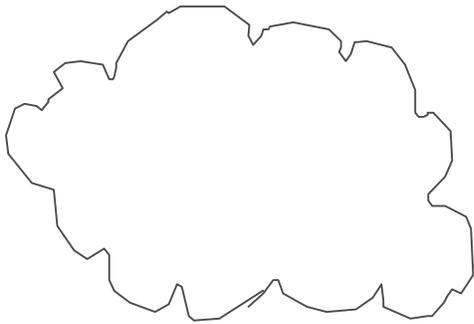


MOEbius can not push the wheelbarrow up the cliff. Help him come up with an idea by unscrambling the word.

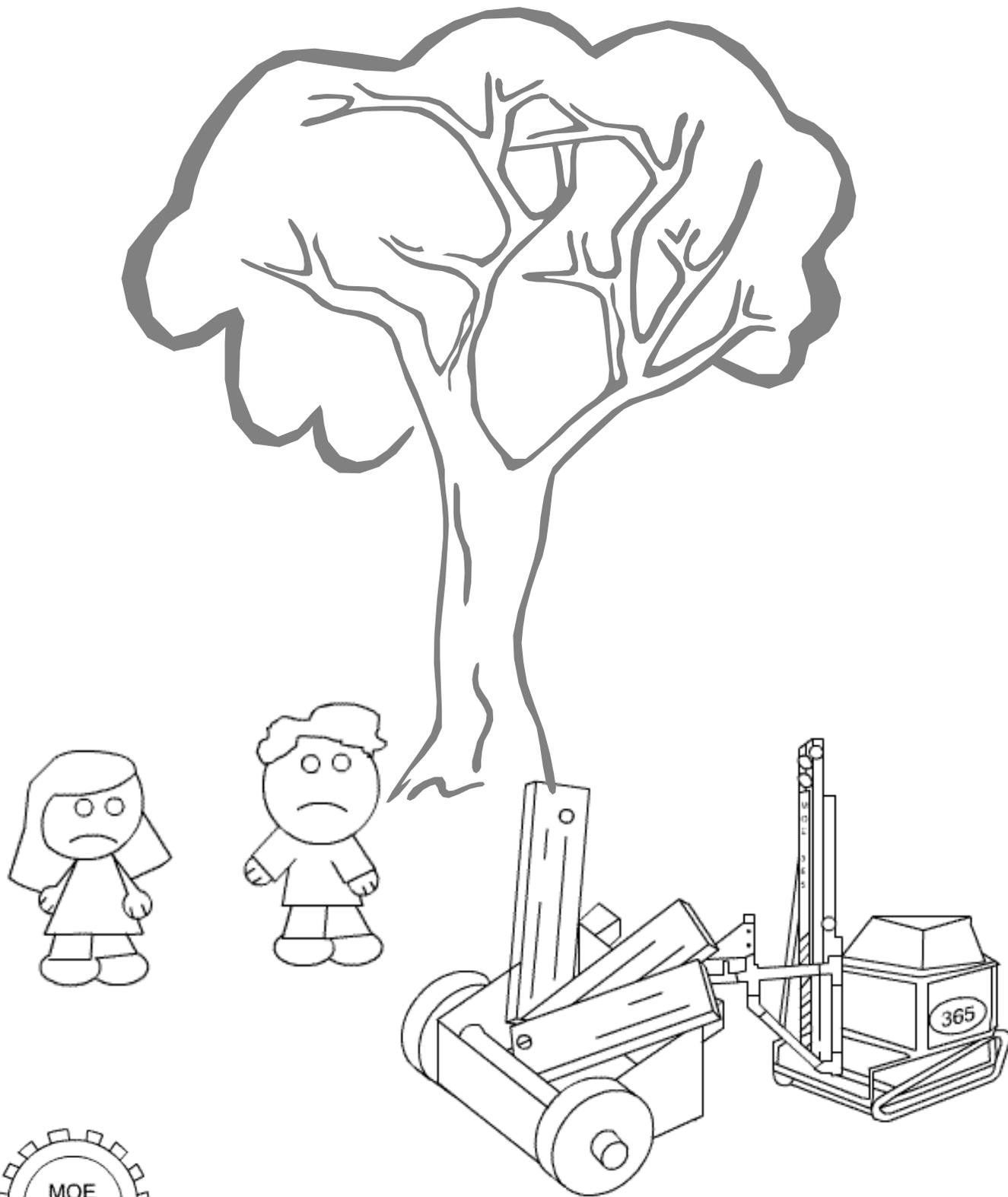
ICNEDINL NELAP



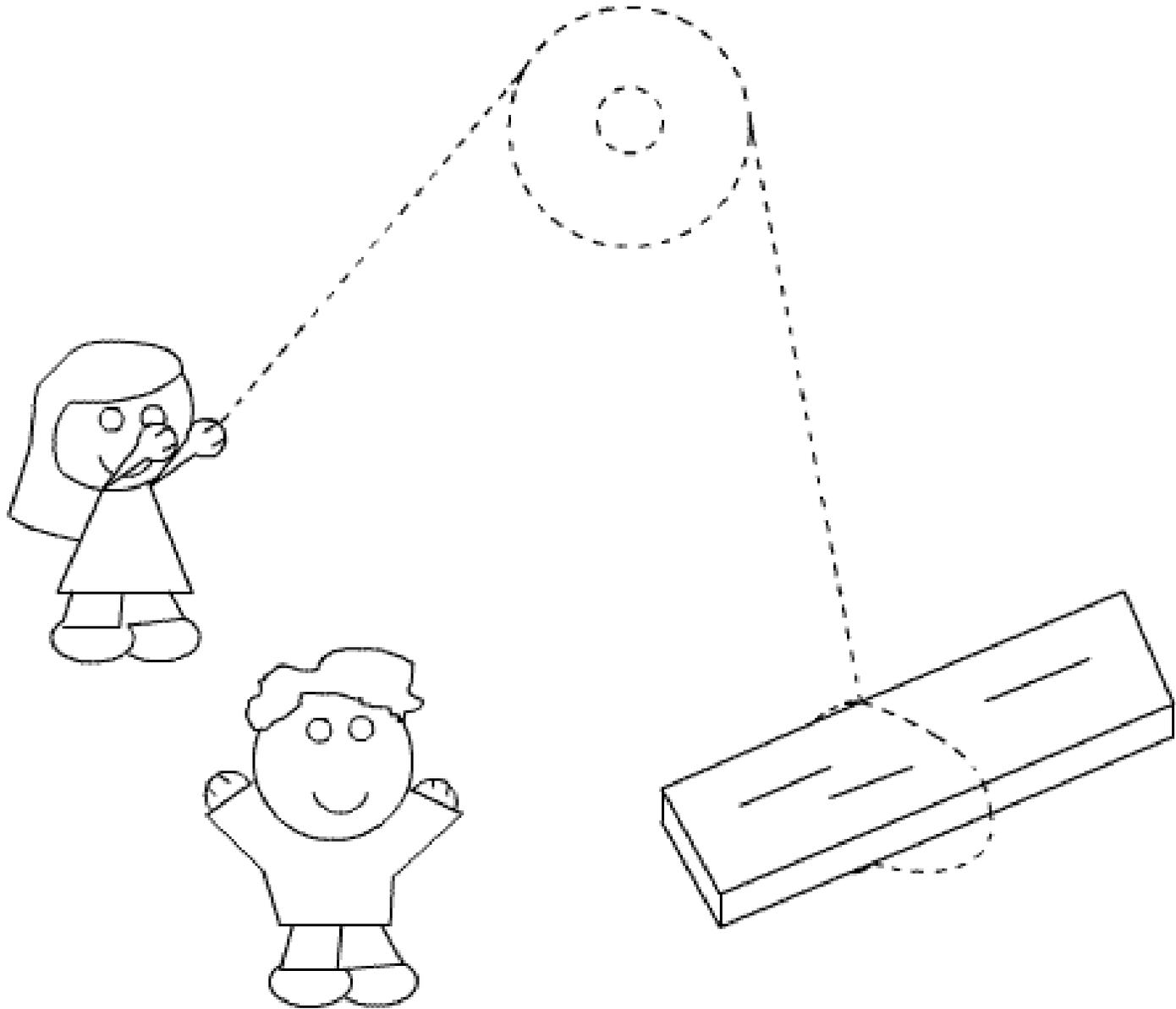
With the INCLINED PLANE MOEBius can bring the wood back to the tree house.



Oh no, MOEbius and his friends can not get the wood into the tree.

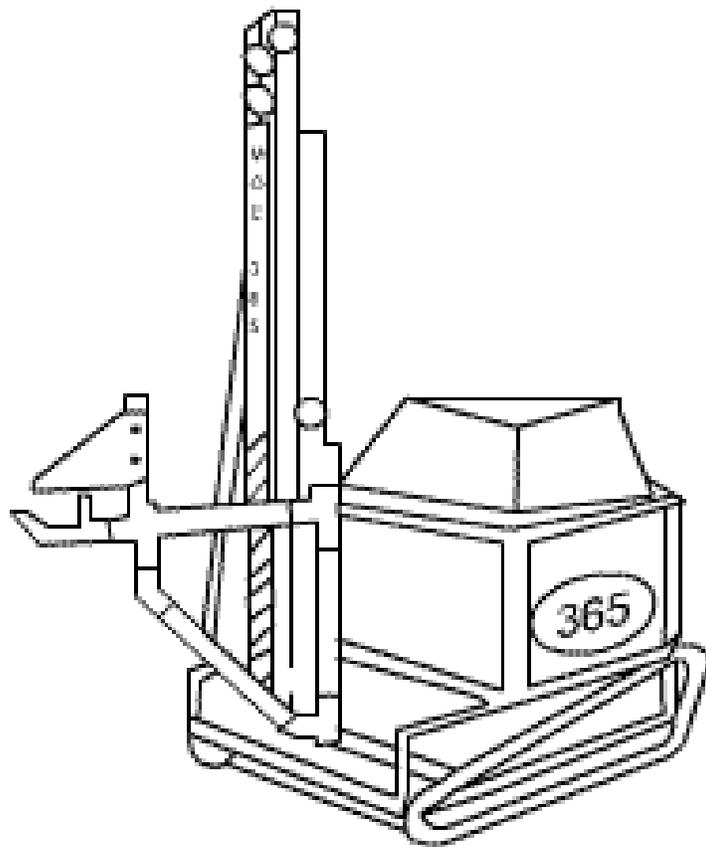
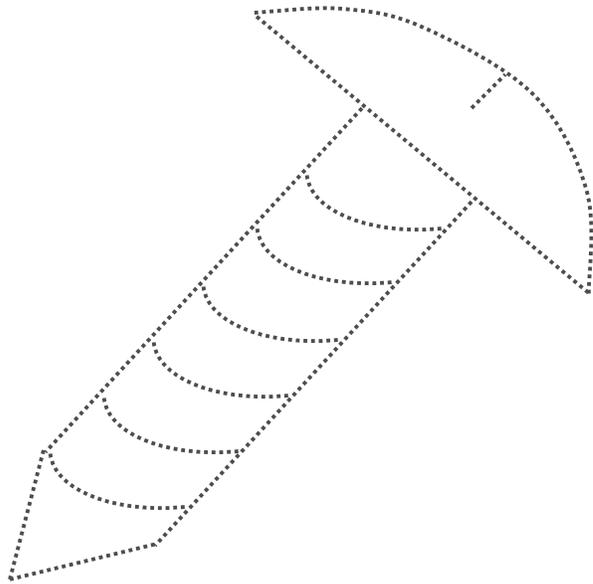


MOEbius's friends can use a PULLEY to pull the wood up the tree. Help them build a PULLEY by tracing it.

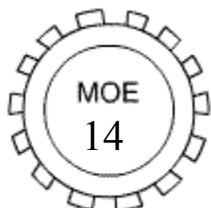


MOEbius's tree house is not staying together.
He needs another simple machine to help him.

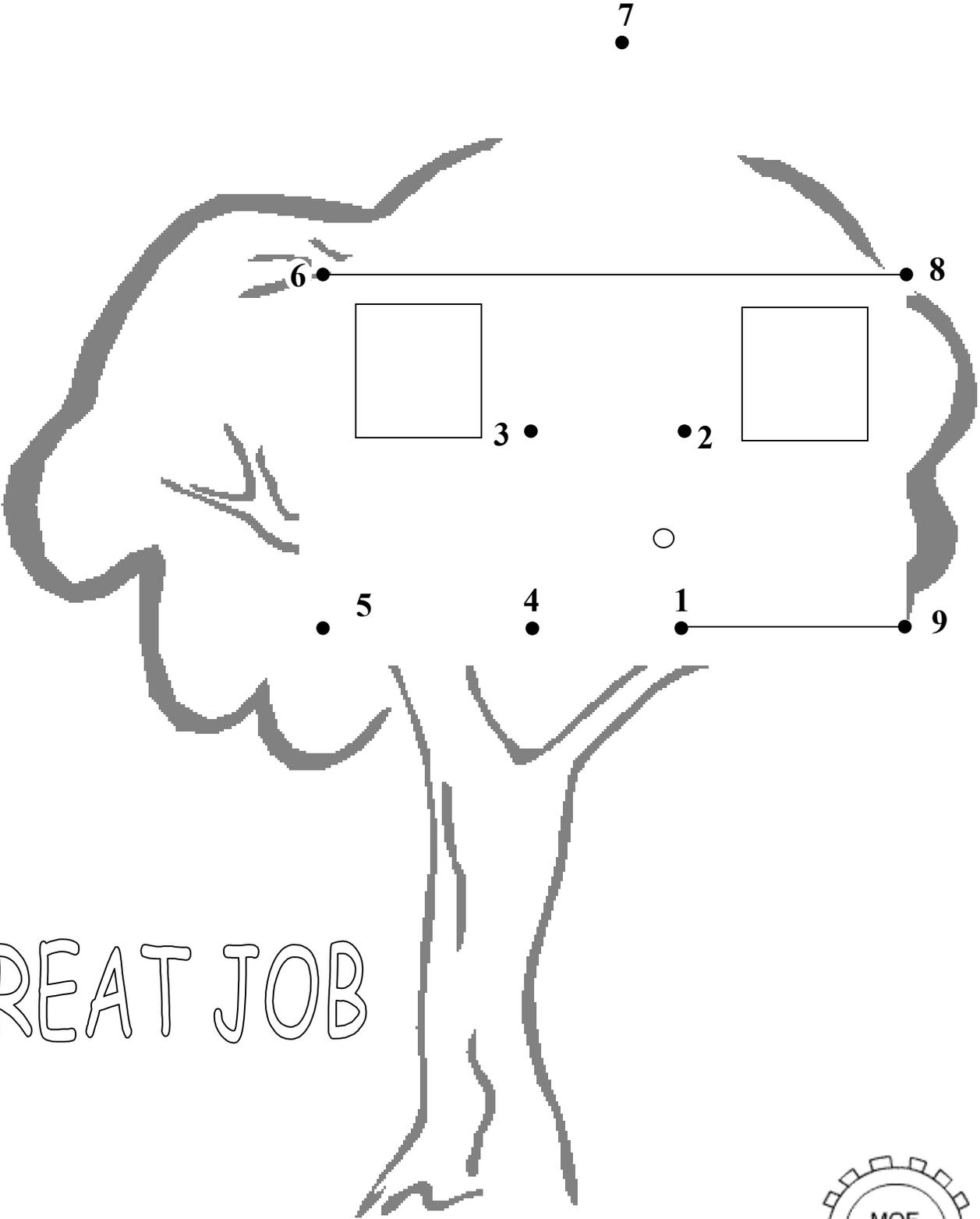
Trace MOEbius's simple machine



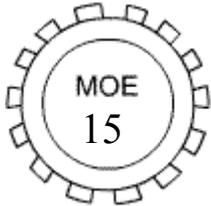
It's a screw!



Help MOEBIUS and his friends build the treehouse by tracing it.

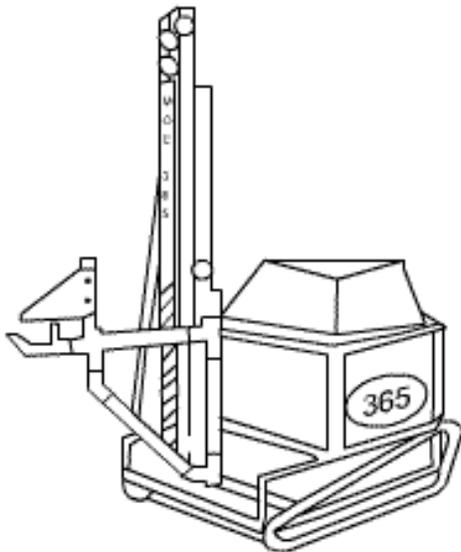


GREAT JOB

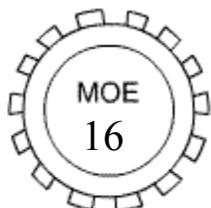


Help MOEBius find all the simple machines!

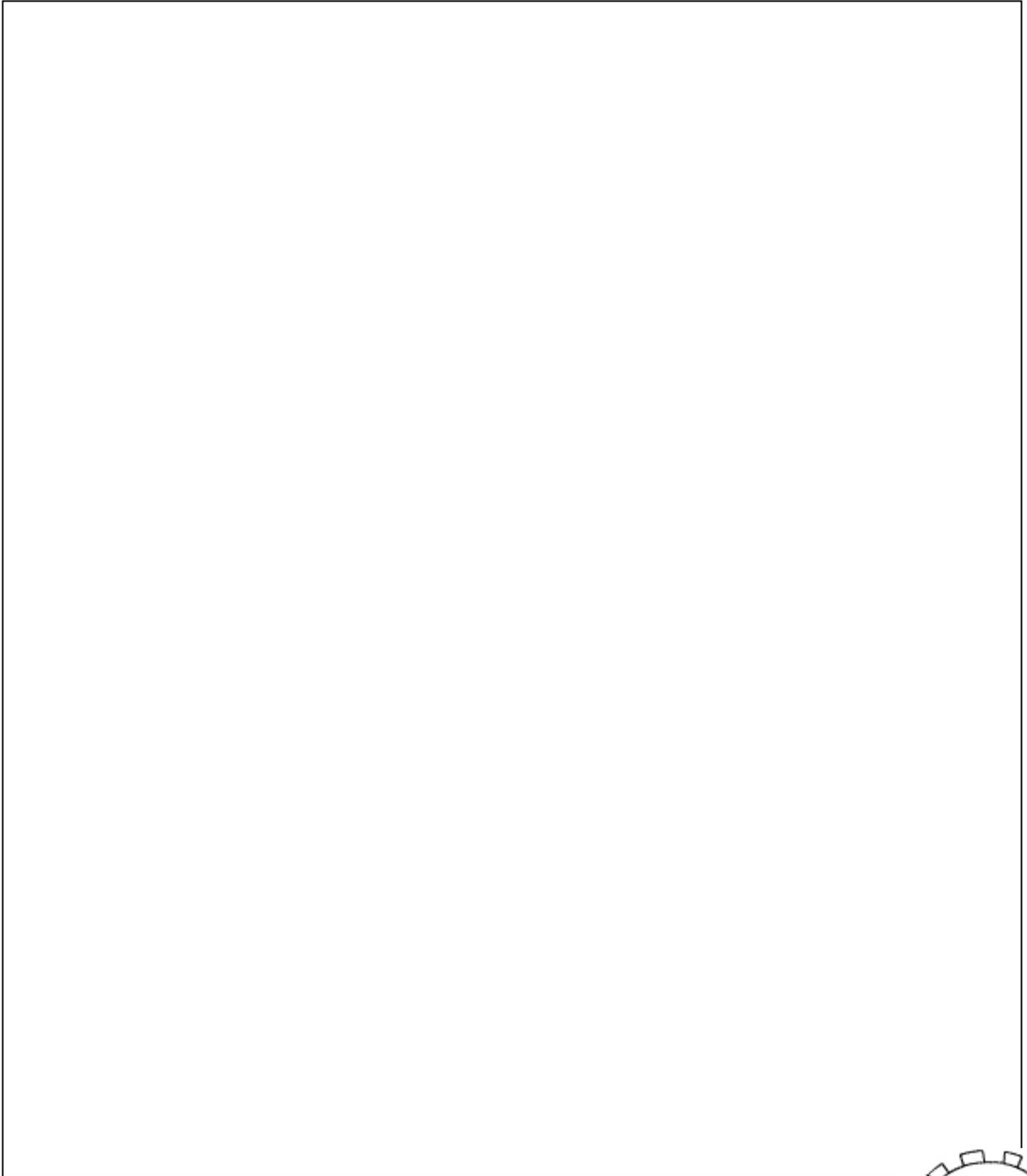
E A G L D G K V T F M S W K Y C
G U F N C T O N S S M S H S Q E
L D N S G N A U K L I N E L N P
I O T C C H I E X T A X E A S G
S M T I V B E G V C G C L E F O
K P K T E E G L E O G P A T I X
E X T O I E E W W M D O N D G O
Q S M B O V R H T E R N D A D E
N E W O E G S E N S M D A P T U
A B Q R Y A A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



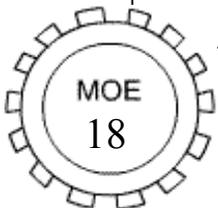
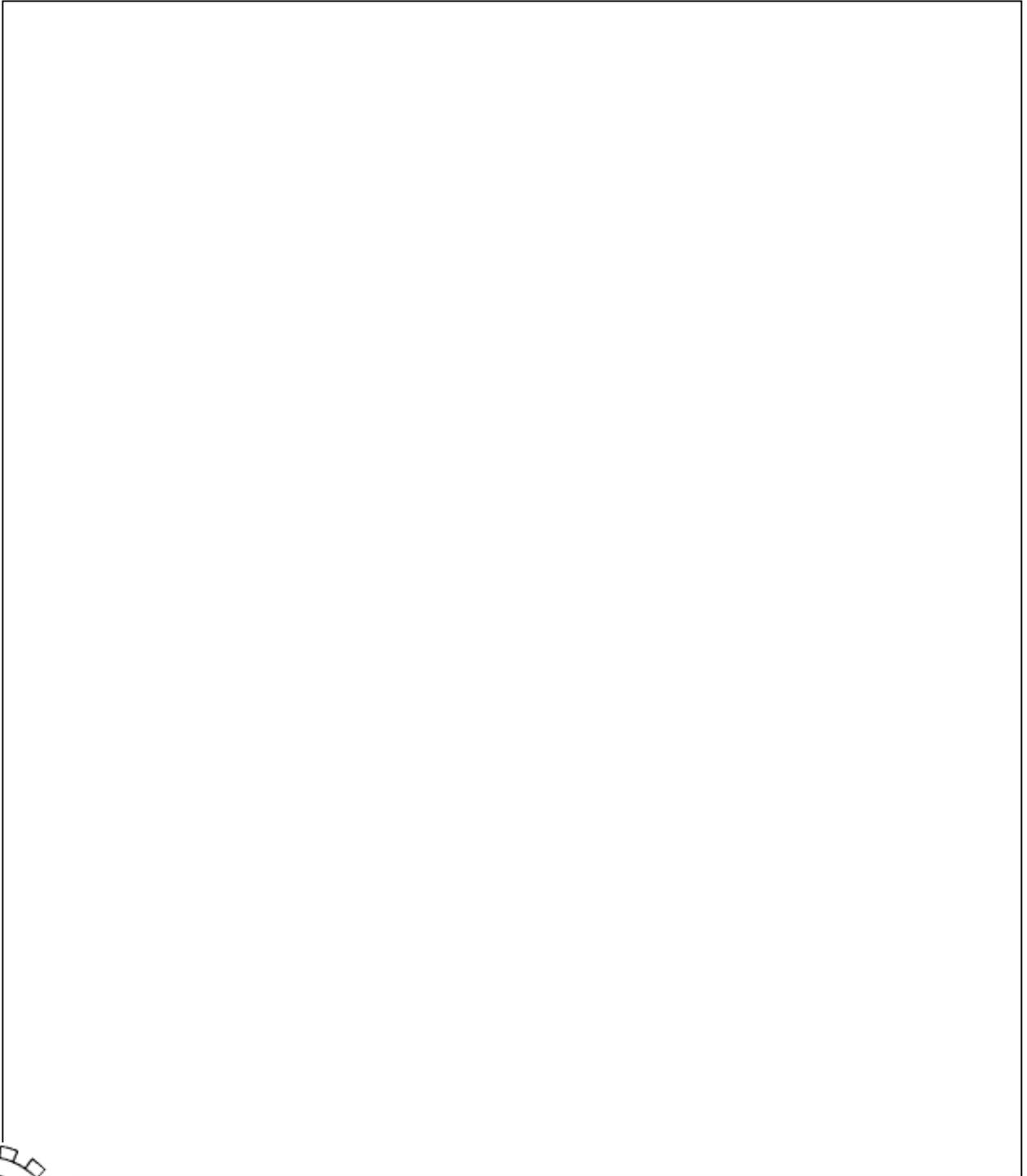
INCLINED PLANE
LEVER
WEDGE
WHEEL AND AXLE
SCREW
PULLEY
MOEBIUS
FIRST ROBOTICS



The first step in building MOEBius was to draw pictures so the MOE team knew what they wanted to build. Draw your own robot below.



Now that you know all about simple machines, put together two or more of them to design your own machine.



Simple machines make work easier! They can be big or small. Often they are found working together in bigger machines.

An **INCLINED PLANE** is like a ramp. MOEBius could easily move his cart to a higher place.

A **LEVER** is like a see-saw. When MOEBius pushed down, the wood went up!

A **WEDGE** is like a door stop. It can force things apart, like a chisel, or together, like MOEBius's door stop. It is made of one or two small **INCLINED PLANES**.

A **WHEEL** and **AXLE** work together. The larger wheel turns the axle which is locked in its center. This makes it easier to do something hard. MOEBius used a wheel barrow to move his wood.

A **SCREW** is a tiny spiral **INCLINED PLANE**! It also makes something easier to do. MOEBius did not pound hard to put his tree house together. He used screws to build it instead. A jar cap stays tight because it is also a screw!

A **PULLEY** helped MOEBius to lift his wood into the tree. Like a **LEVER**, when MOEBius pulled down, the wood went up. A flag pole also uses a pulley to raise the flag to the top.

More about simple machines:

EDHEADS Fun activities and games. <http://www.edheads.org/activities/simple-machines/index.htm>

THE INVENTOR'S TOOLBOX Everyday examples of simple machines.
<http://www.mos.org/sln/Leonardo/InventorsToolbox.html>

THE INQUIRY ALMANACK More info about the six simple machines.
<http://sln.fi.edu/qa97/spotlight3/spotlight3.html>

MIKIDS Kid friendly site with printable activities and a quiz. <http://www.mikids.com/Smachines.htm>

SIMPLE MACHINES MADE SIMPLER A website designed by kids!
<http://www.smartown.com/sp2000/machines2000/>

DIRTMEISTER Investigate and report for yourself about simple machines.
<http://teacher.scholastic.com/dirtrep/simple/>

MR. W'S PAGE A cool quiz and demonstration of simple machines in everyday use.
<http://staff.harrisonburg.k12.va.us/~mwampole/1-resources/simple-machines/>

SIMPLE MACHINES GAME Move around the picture to locate and identify simple machines.
http://www.harcourtschool.com/activity/machines/simple_machines.htm

PROFESSOR BEAKER'S MACHINES WITH SIMPLE MACHINES. Explains how often larger machines are made from simple machines.
http://www.professorbeaker.com/simplemachines_inmachines.html



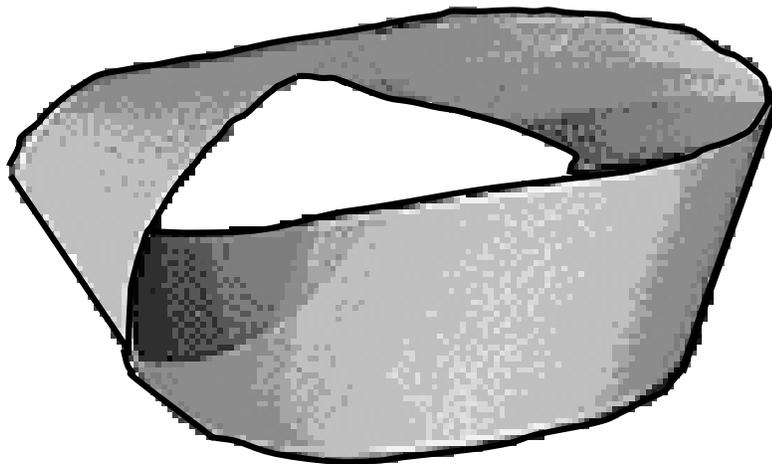
Where did MOEBIUS get his name? He is named after a MOBIUS STRIP.

A mobius strip is ring of paper that has only one side! To make your own mobius strip, see:

<http://www.beakman.com/beakman/news/071600/071600.html>

<http://www.sciencenews.org/articles/20000708/mathtrek.asp>

<http://pbskids.org/zoom/activities/phenom/mobiusstrip.html>



Who are we?

We are a group of students from 14 different high schools who enjoy the challenge of designing, building and shipping a robot within a 6-week time frame. This teaches us many things such as teamwork, various areas of engineering, computers and construction. Our team name is MOESM, which stands for Miracle of Engineering, and our team number is 365. Our mission is to bring engineering and science into the lives of young people through robotics. We hope that through our books and literacy efforts we can carry our message to younger children that “science is cool for everyone from 3 to 365!”

We belong to a national organization called FIRST[®] – For Inspiration and Recognition of Science and Technology. (www.usfirst.org)

Middle school students can also participate in FIRST LEGO[®] League competitions. For more information please visit: <http://www.moe365.org/lego/FLLmain.html>

Or visit <http://www.usfirst.org/jrobotics/fllego.htm> for more information on all of FIRST LEGO[®] League.

For more information on our team, events and contact information please visit our award winning website: www.moe365.org

Other sites that you can visit to see how cool learning about science and technology can be are:

www.howthingswork.com