

# What to do when you are in Europa

NuCli 1Q 2016



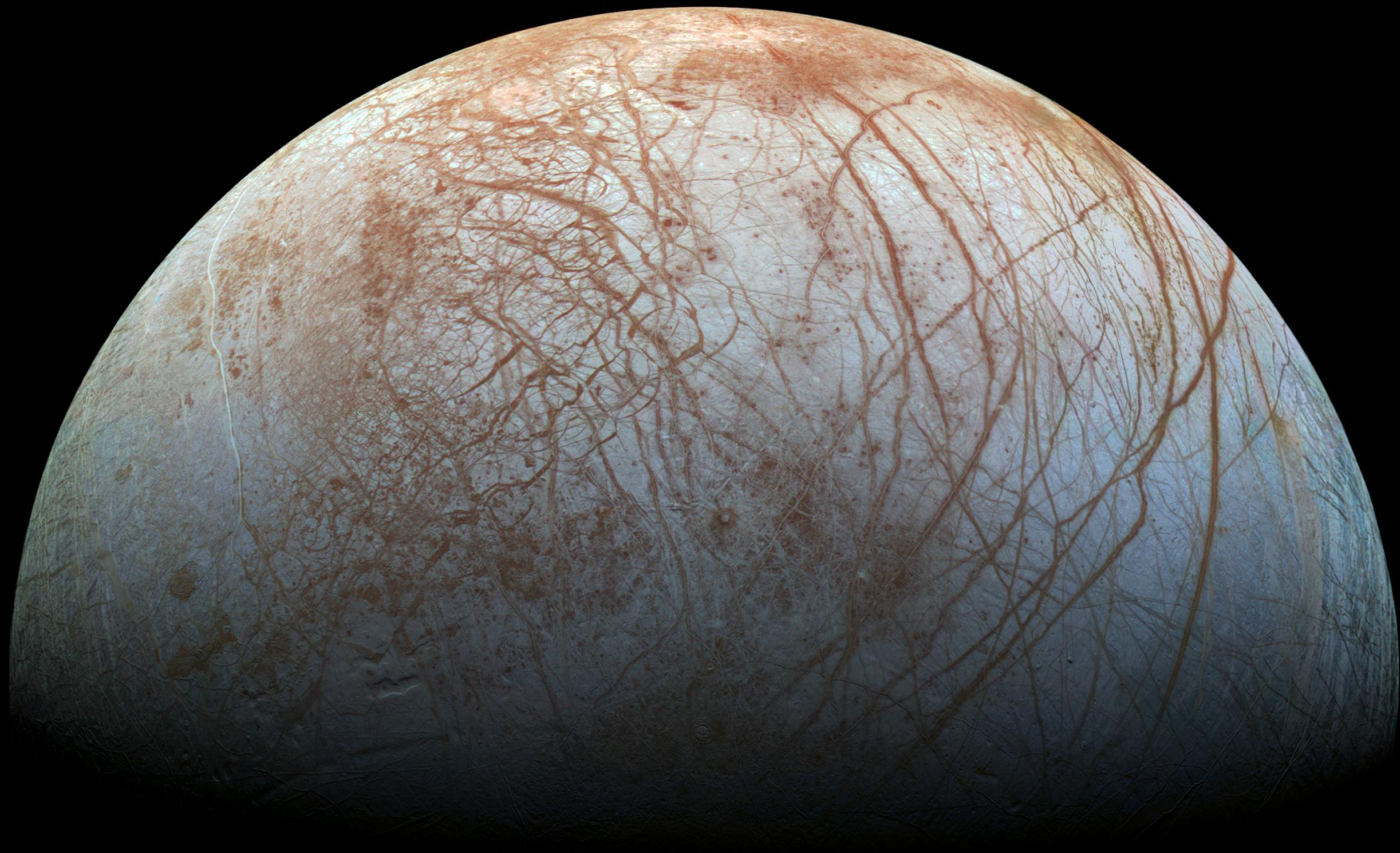
## Lenin

- Came to Brazil in 84'
- Watch Star Wars in 89'
- Start coding in 00'
- Enters UFABC in 14'
- Expect to graduate in ???



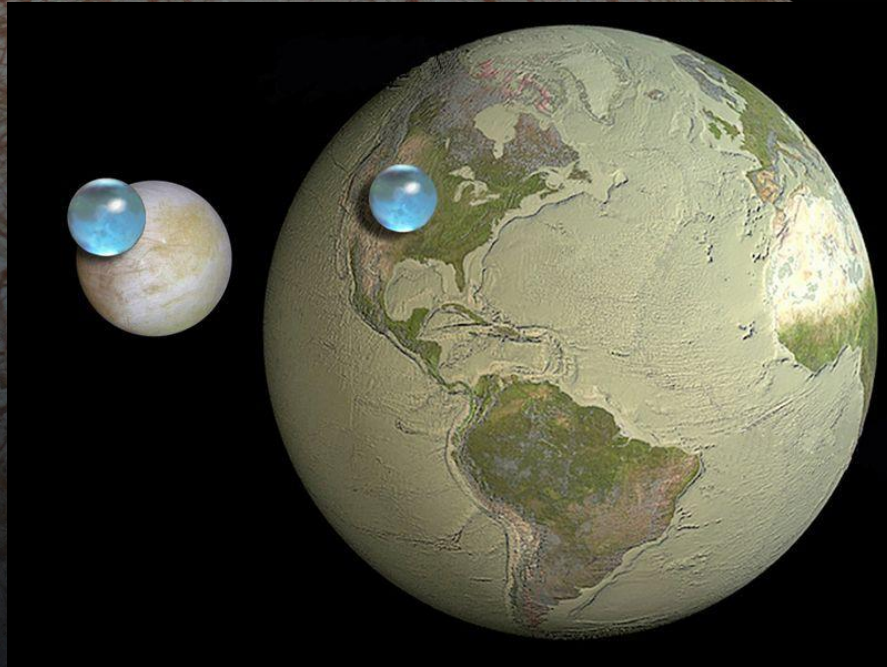
## Europa

- Beautiful place
- Some regions are cold
- Some regions are bleeding cold
- Ice everywhere



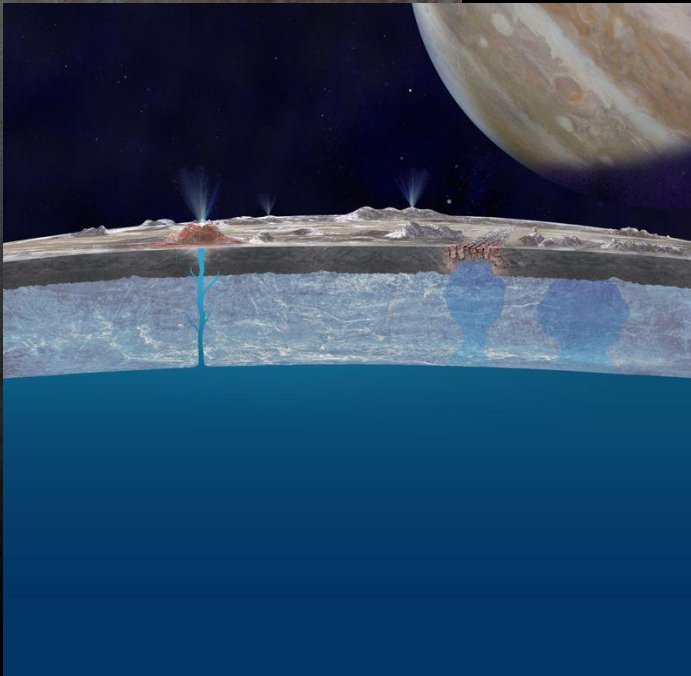


# Europa

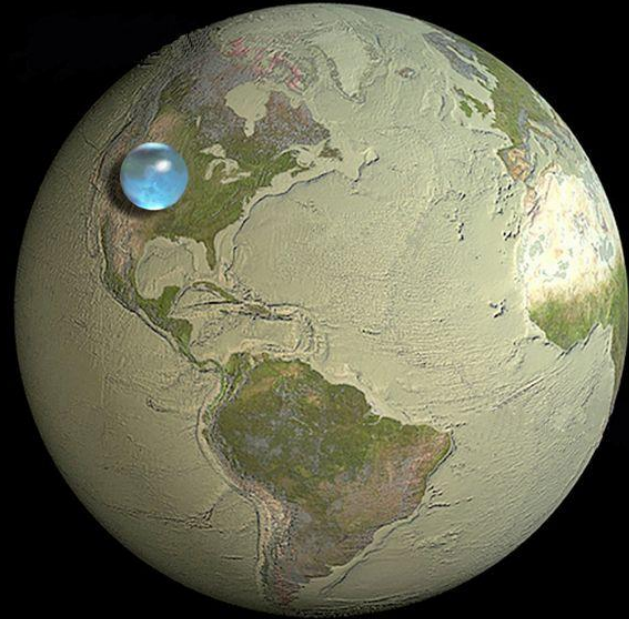


An illustration showing the calculated volume of water on Europa, compared to Earth. (Kevin Hand (JPL/Caltech), Jack Cook (Woods Hole Oceanographic Institution), Howard Perlman (USGS))

# Europa



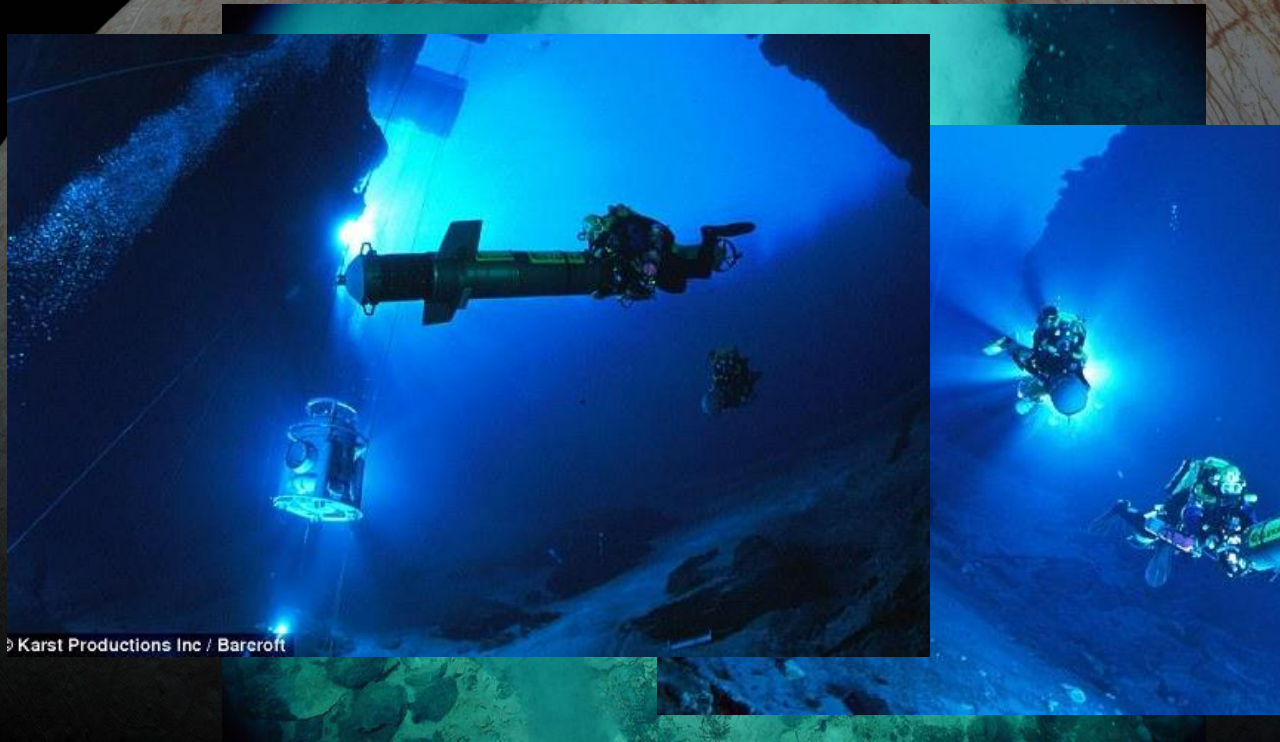
An artist's impression of Europa's subsurface ocean. (NASA/JPL-Caltech)



An illustration showing the calculated volume of water on Europa, compared to Earth. (Kevin Hand (JPL/Caltech), Jack Cook (Woods Hole Oceanographic Institution), Howard Perlman (USGS))



# Europa

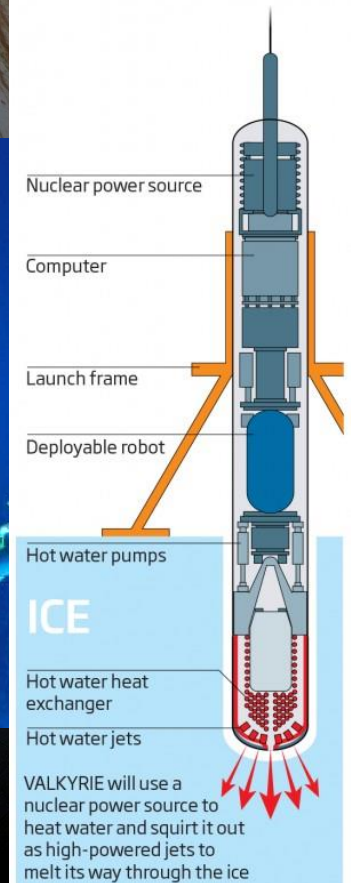


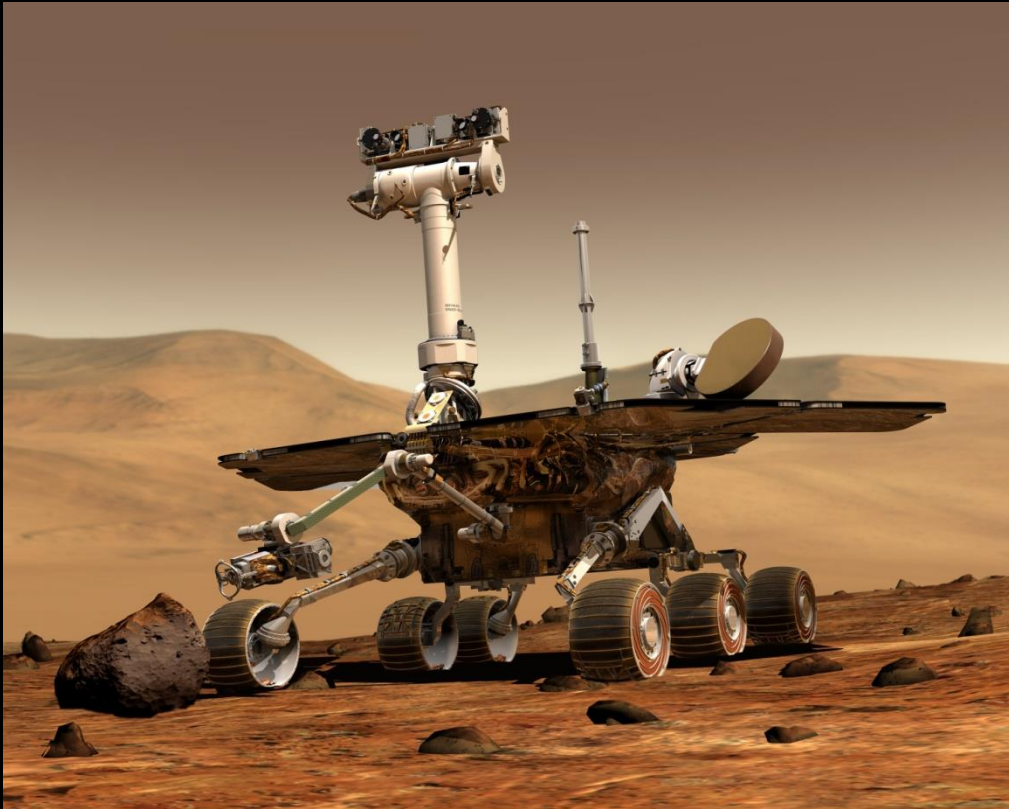
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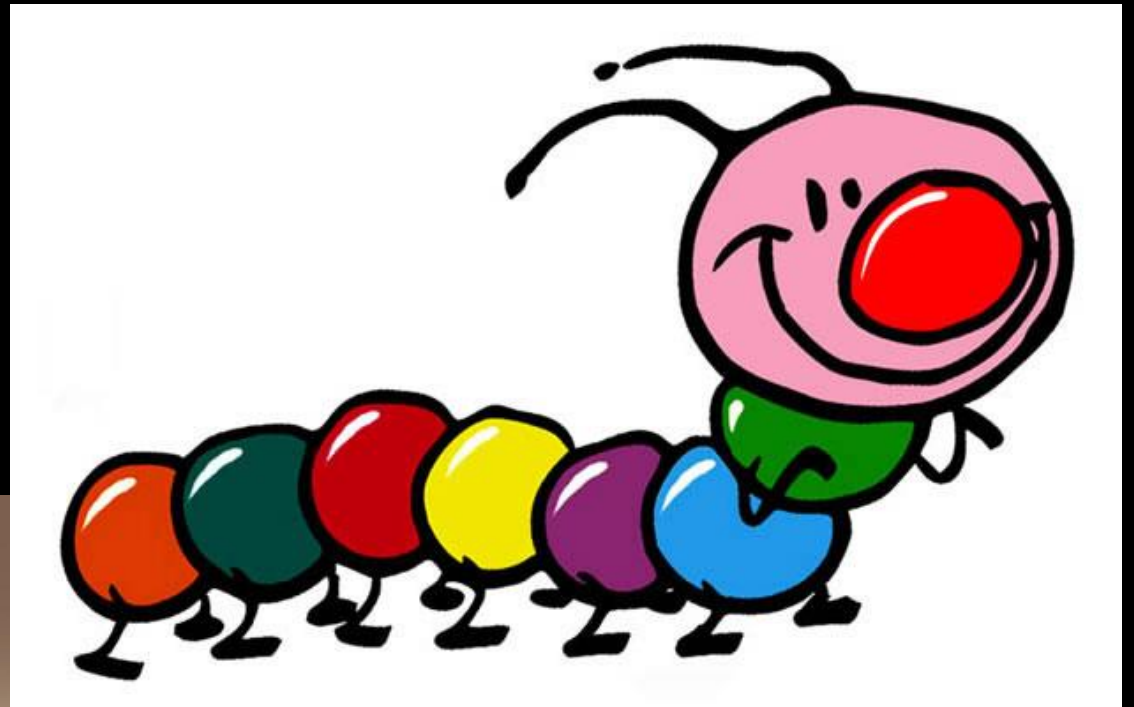
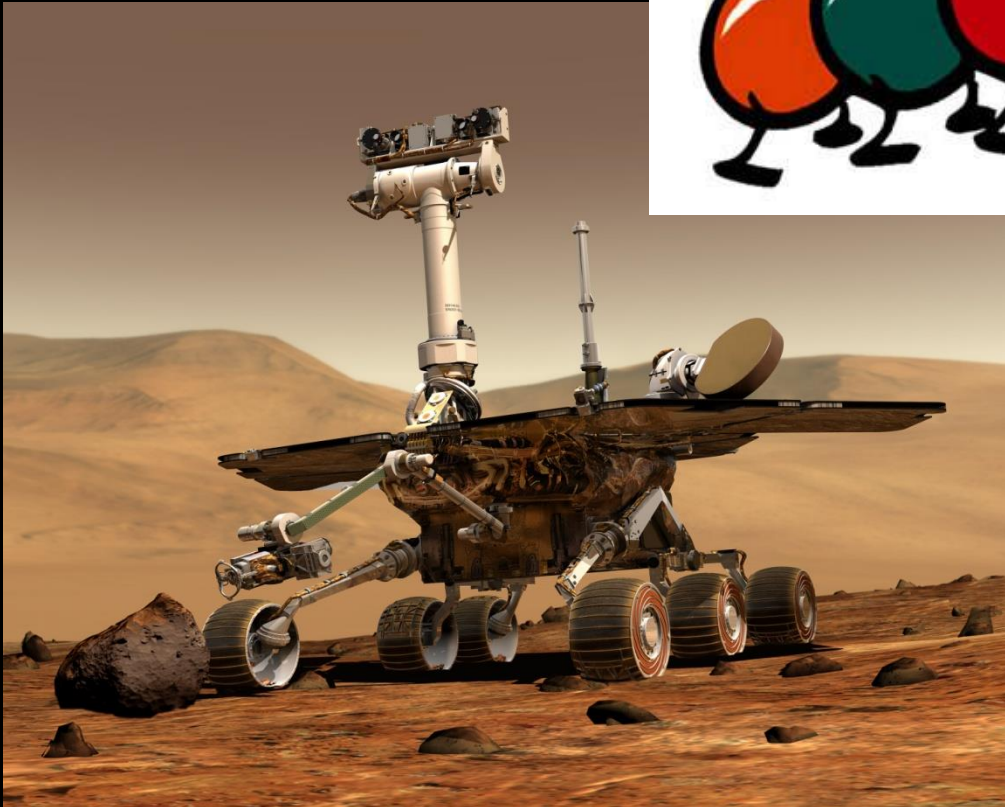
Hydrothermal vents on Earth's ocean floor are the best analogue for what Europa's ecosystems might look like. (NOAA)

## Icy moon diver

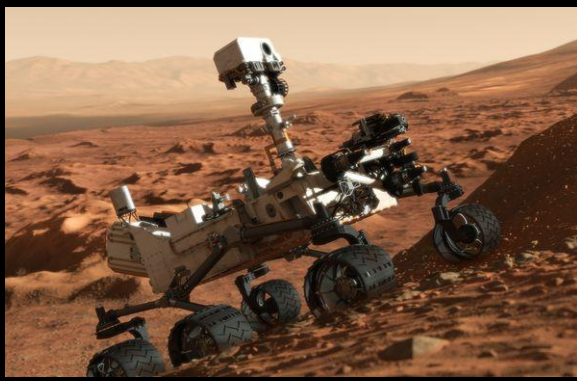
The VALKYRIE robot is designed to pierce the shell of Jupiter's moon Europa and deliver smaller robots to explore its suspected sub-surface ocean







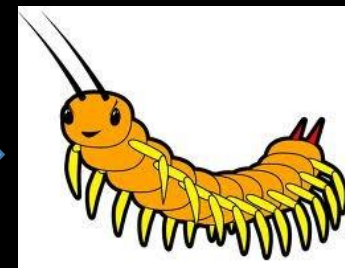
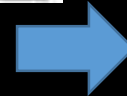
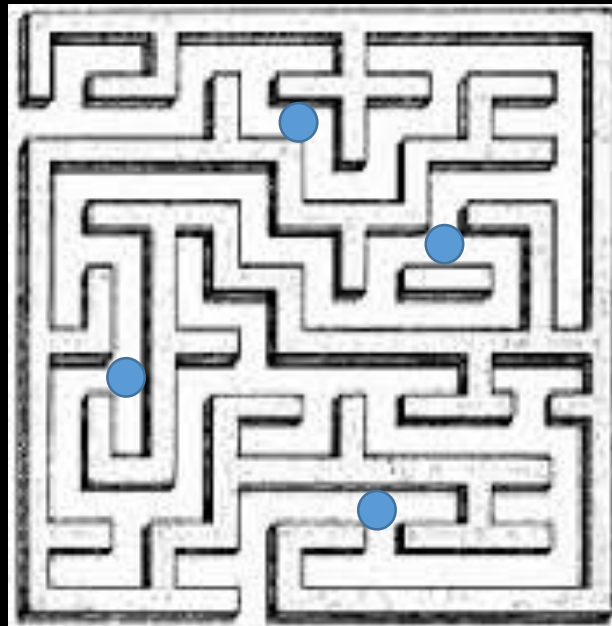
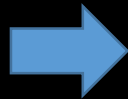
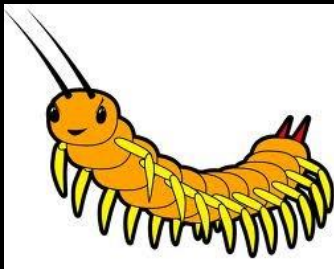
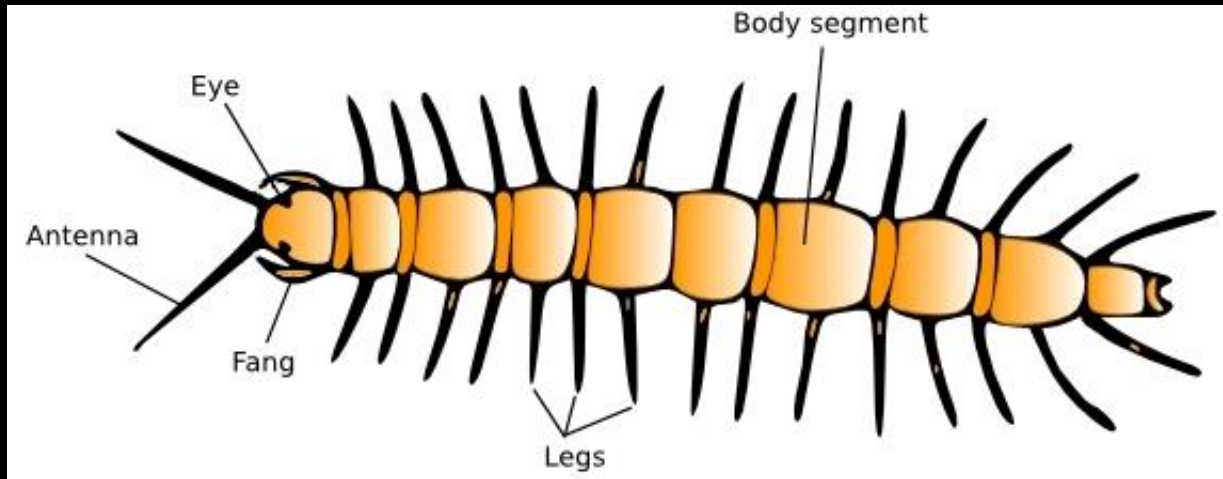




- More energy efficient in regular surfaces
- High speed in plain surface
- Less complexity
- Don't climb
- If it rolls over, the mission ends
- Can't cross gorges
- Can't swim



- Theoretically spends more energy to move
- Medium speed in any surface
- More complexity
- Climbs
- Can make complex moves to solve puzzles
- Can mimetize centipede movements, including cross gorges
- Can mimetize water snake movements





## Dolphin

- Best design period
- Native telepathic skills
- Can swim
- Lives for 20 years
- Very nice with kids
- Can save you
- Sleep at night



## iPhone

- Best design a human can do
- Eventually completes a call
- Don't try, won't happen
- Lives for 12 months
- Very dangerous with kids
- Can spy you
- Sleep every 4h if you don't reach a energy source



