



Bite of Science

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Challenges:

1. Awaken students to the excitement, importance, value, and opportunity in a career in Science, Technology, Engineering or Math.
2. Help them to understand that they are capable of a STEM career.
3. Identify students that have demonstrated the interest and the aptitude and provide appropriate guidance so that they can make informed decisions regarding, and take appropriate steps towards, a STEM career.

Step 1:

Open their minds to the fantastic disguised in the seemingly simple and the intuitively obvious.

How?

Challenge them with “What Makes it Work” questions so often that the impulse to question becomes ingrained into how they look at the world.

Note: You don't need to know the answer.

It may be better if you don't.

Examples: A typical smartphone has the capability to provide:



What is the technology behind the “Maps” function?

How does your phone keep your text message conversation separate from all the others?

What is the technology behind:

- **A Magnetic Resonance Imaging Machine?**
- **A Computer Aided Tomography Machine?**
- **A microwave oven?**
- **A full length animated movie?**
- **A self-driving vehicle?**
- **World of Warcraft?**
- **The audio system in your car?**
- **Virtual Reality?**
- **Siri and how did she get so smart?**
- **The scroll function on your I-Pad?**

What is:

- **The human genome?**
- **How did it get sequenced?**
- **How is gene splicing accomplished? How can we even see a string of genetic material with the detail needed to manipulate it?**
- **What is gene therapy?**
- **Artificial (machine) Intelligence and what are the implications?**
- **The “CLOUD”?**

How does:

- **A 100 Story building stay standing and not collapse under its' own weight?**
- **A product made in China get to your Local WALTMART?**
- **A picture or document you send to a friend anywhere on earth get there without a single bit lost or changed in transmission?**

How many:

- **250 page books can you fit on a 32 gig memory stick (approx. 2,560 or 215 years worth based on the national average of 1 book/month)?**
- **Crewmembers on a 1300 foot container ship carrying 19,000 containers? (13).**
- **Tansistors on the main integrated circuit chip in the latest I-Phone? (2 billion on a silicone wafer 1 cm²).**

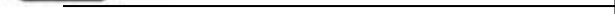
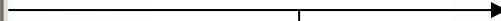
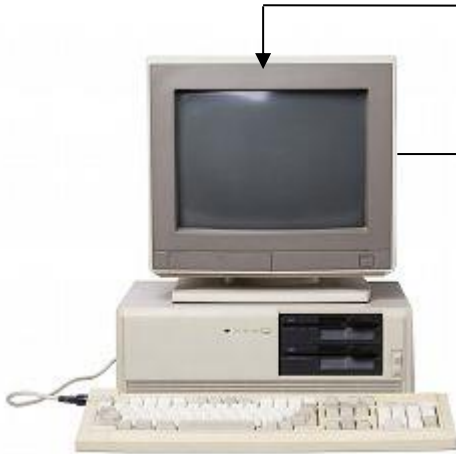
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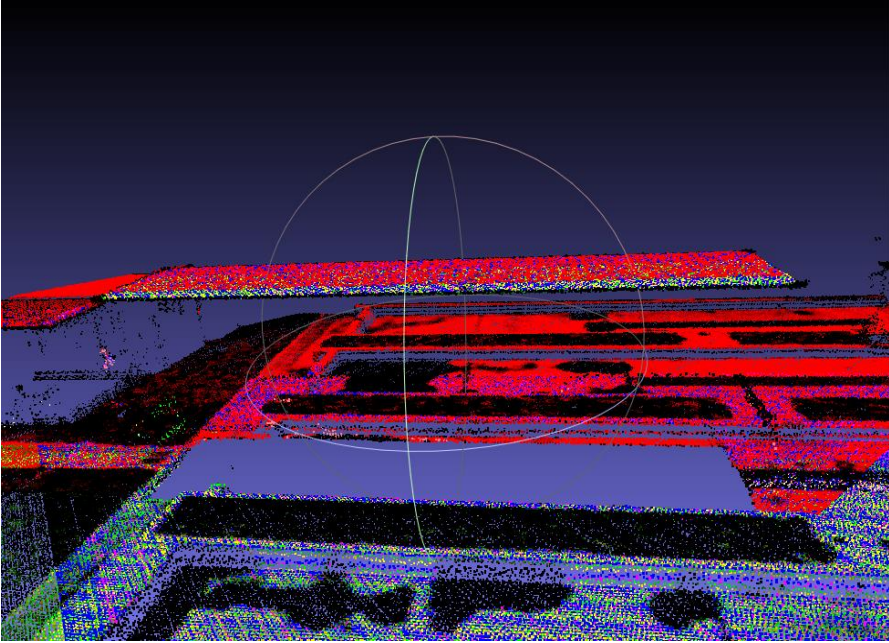
- **STEM Professionals disguise the incredible complexity of modern devices “even a 1.5 year old can do it”.**
- **It is unlikely that anyone in a STEM profession will ever be selected as the most interesting man or woman in the world. But, we do have some of the most interesting jobs in the world.**
- **Developing the necessary skill takes work but once you have the basics, you have a lifetime to build on them. Learning is built into the job.**
- **STEM professional will have multiple “careers”. Today’s technology is only a foreshadowing of tomorrow's. We cannot begin to image the foundation of knowledge we will have to build on an the tools at our disposal.**
- **STEM professionals seldom work alone. The team gets the job done but every essential discipline needs to be represented.**

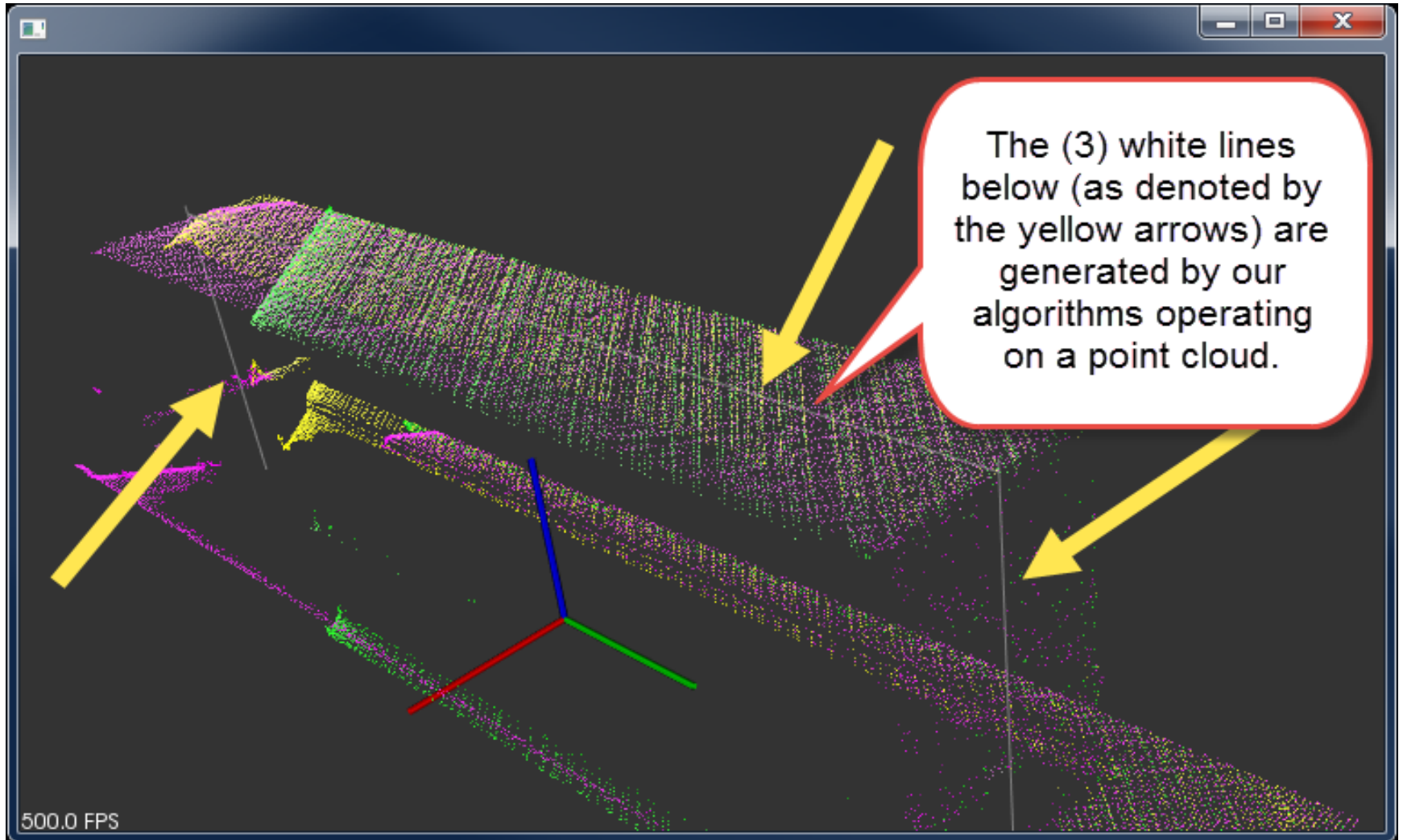
Knowledge grows exponentially. Knowledge accumulated sets the foundation for the acquisition of more knowledge. By some estimates, technical knowledge doubles every 12 days.

STEM Professionals:

- Have the privilege of standing on the foundation of knowledge built by everyone who has worked in related fields before them.
- The opportunity to use this knowledge and technology to benefit individuals and society.
- And the responsibility to add a nugget or two of knowledge or to move technology forward.







Without STEM Professionals

**The world as we know it, and likely
human civilization itself, would not
exist!**



THANK YOU and TEACH WELL
Our World's Future Depends on It