

Managing your University learning experience

Talk 1



The 'Active Learner'



Computer:

The more data we put into it
the slower it makes connections between data

Human brain:

The more data we put into it
the quicker it makes connections between data

Active Learning:

Helps to build connections between existing data in our
brain and new data acquired during study periods

Spectator or Active Participant?

Are you in control of your university educational 'journey'?

(Do you feel like the driver of the car or the passenger?)

Spectator or Active Participant?

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*“If you don’t know where
you are going, any road
can take you there”*

Lewis Carroll (1832-1898)



Spectator or Active Participant?

- Academic Goals:

Do you have a 'roadmap' route to follow in achieving your academic goals at university or are you drifting along with the crowd?

- Lectures:

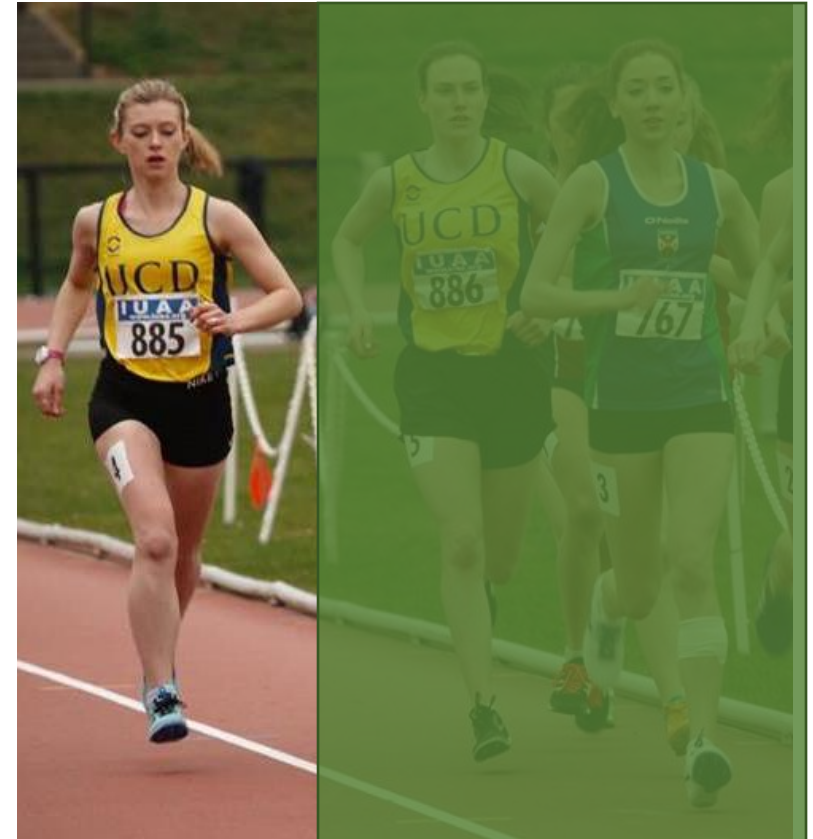
Are you a spectator or an active participant?

- Study Periods:

Are you reading to understand or just 'soaking up' facts?

“Run your own race”: Manage your learning experience

- Take responsibility for your personal university learning experience
- Become an information seeker, rather than an information taker
- Thereby, develop the skill of active, independent and self-motivated learning

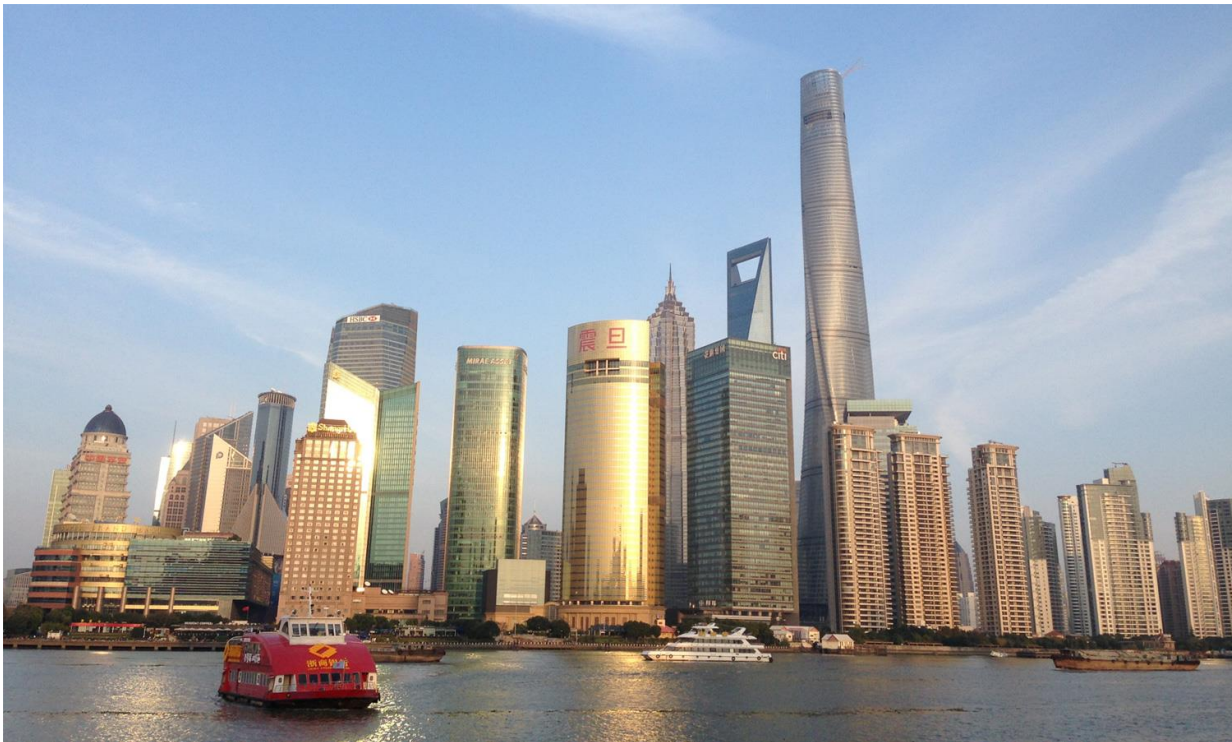


What is 'active learning'?

- We experience 'active learning' when we find the **answer** to a **question** that we have already framed in our mind

Example of 'active' learning

Finding the answer to a question that we have already framed in our mind:



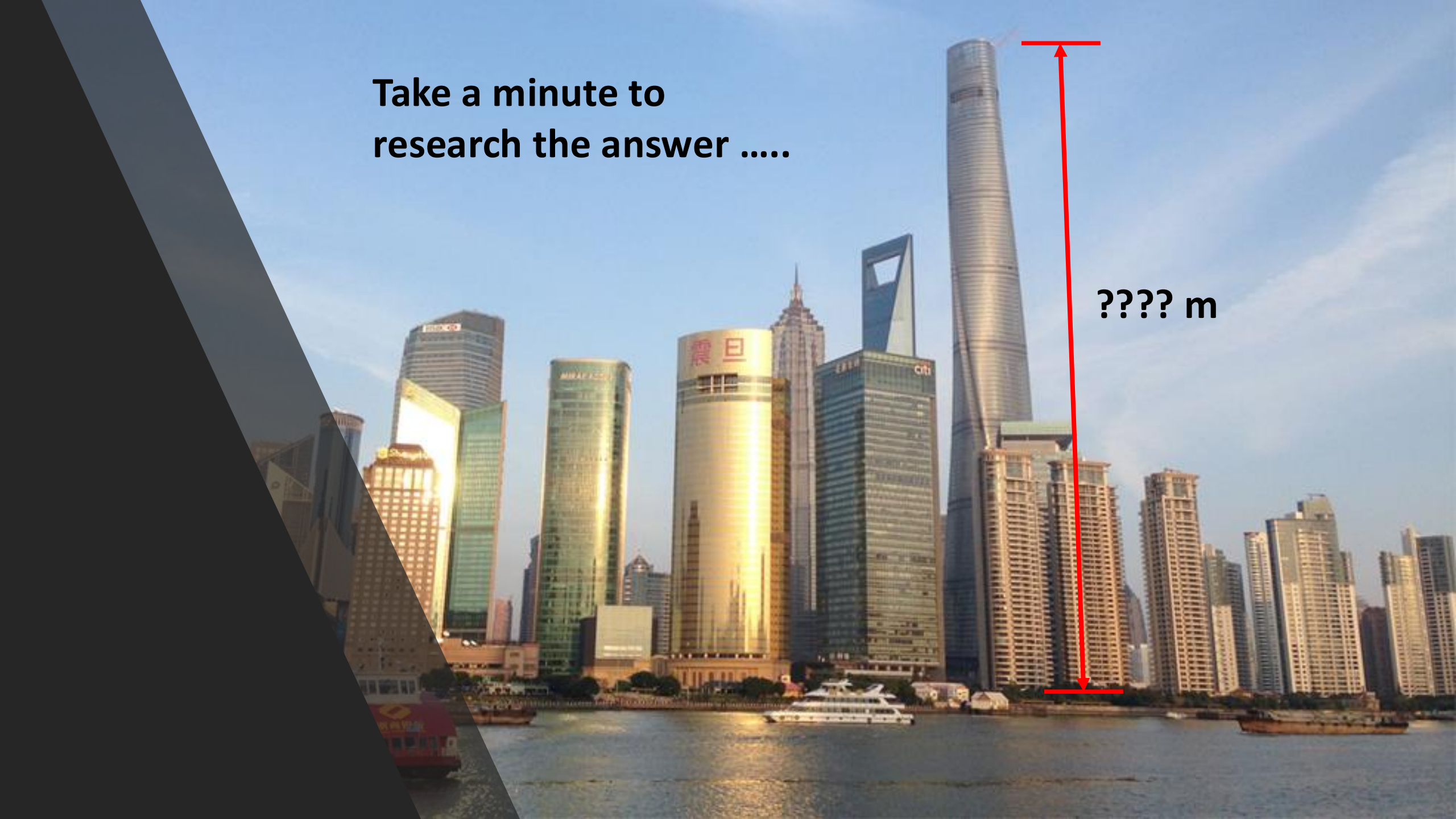
Question:

What is the height of the tallest building in China?

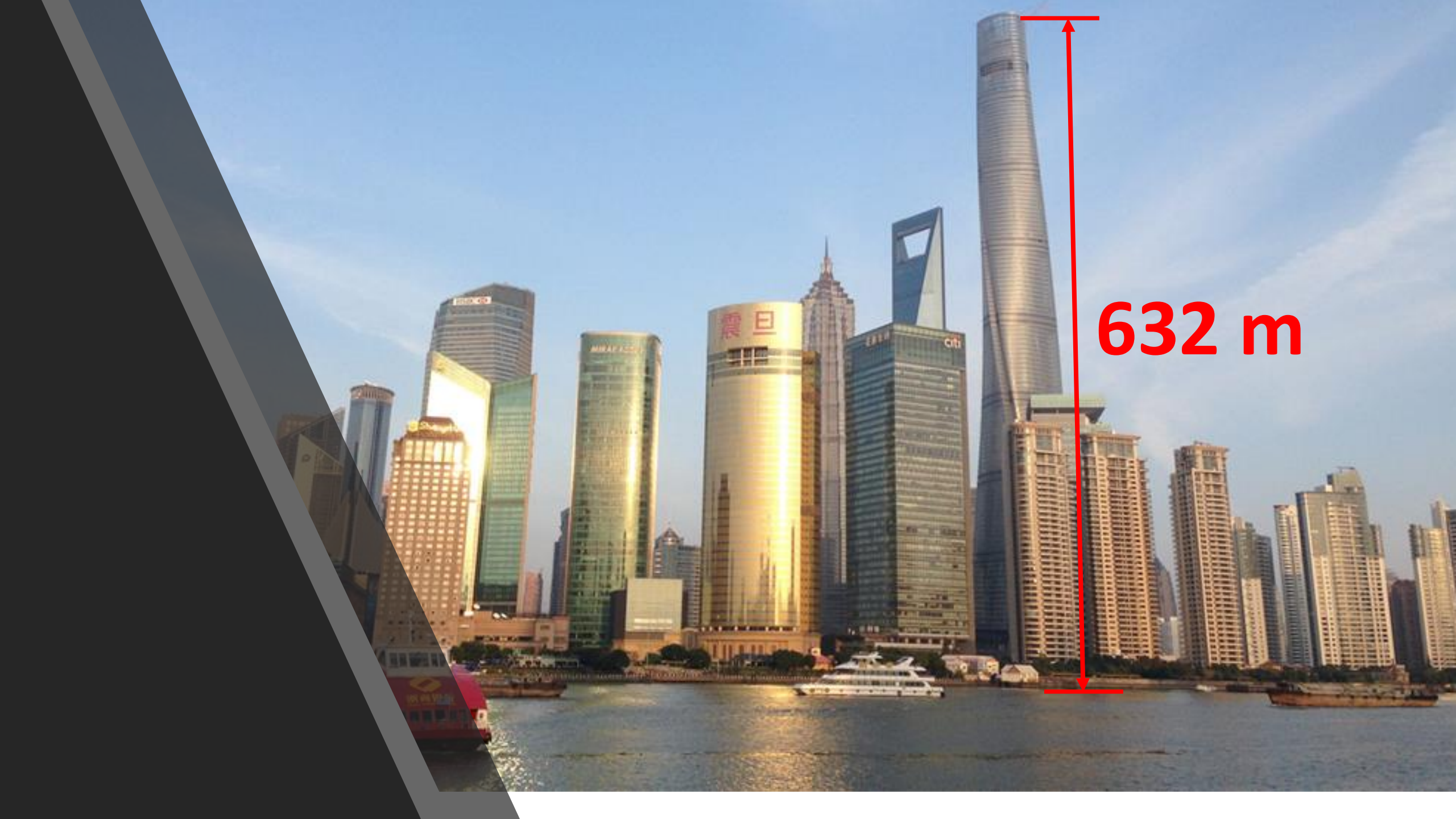
Answer:

.....

Take a minute to
research the answer



???? m



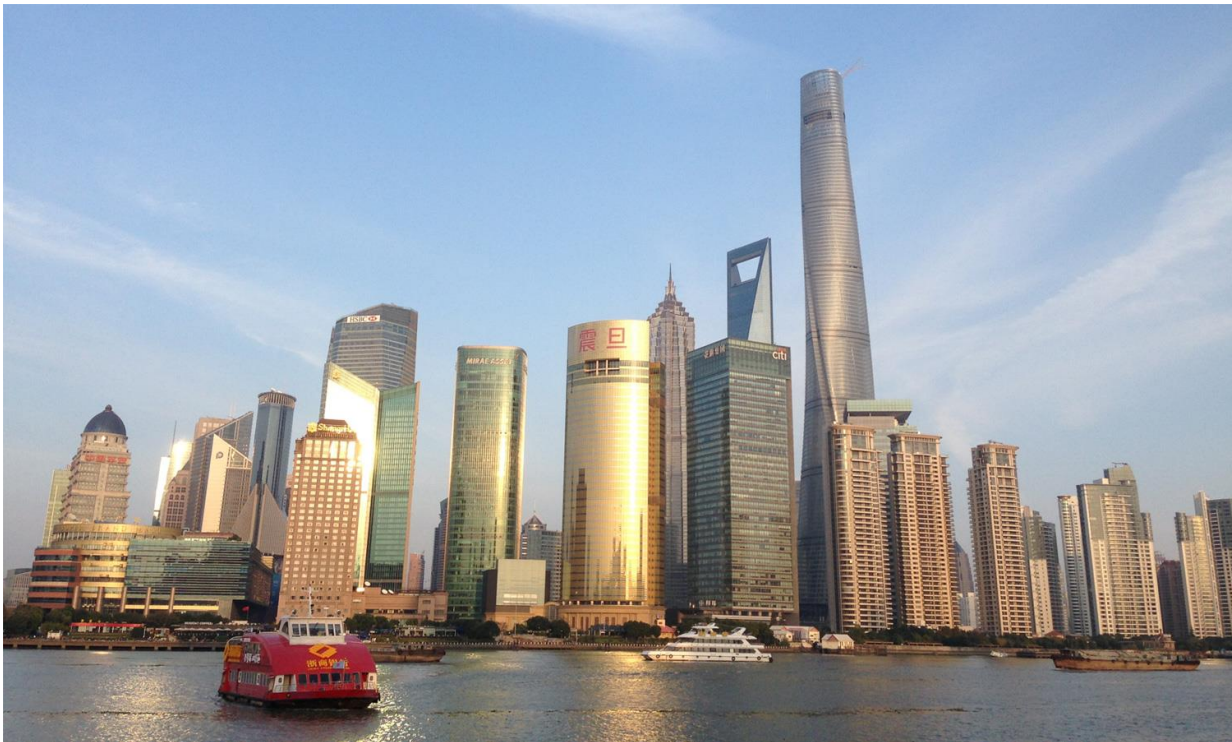
632 m

What is 'passive' or 'incidental' learning?

We experience 'passive' or 'incidental learning' when we discover facts in an unplanned way

Example of 'passive' or 'incidental' learning

Finding information in an unplanned way ('passive' or 'incidental' learning)



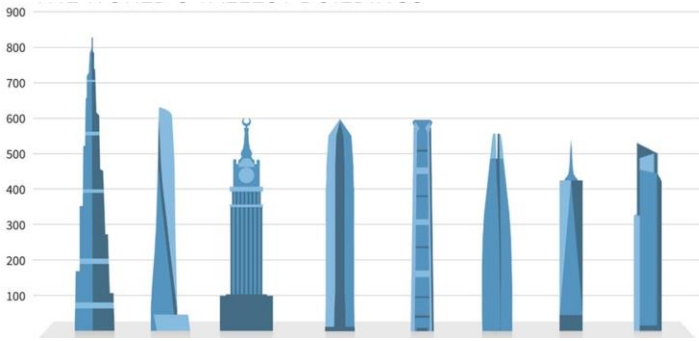
Question:

No question is formulated in advance (passive learning)

Fact we will discover:

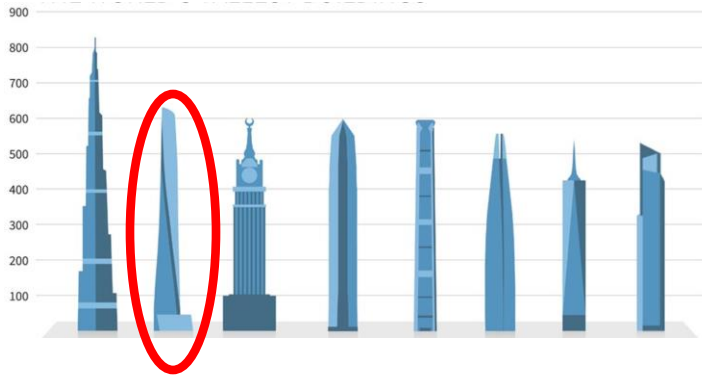
The height of the tallest building in China is 632 m

Example of 'passive' or 'incidental' learning



The international organization Council on Tall Buildings and Urban Habitat was formed in 1969 and officially declares the title of "The World's Tallest Building". It sets the standards by which buildings are measured. To be listed, buildings must have continuously occupiable floors and a height of at least 350 m. There are currently 64 buildings in this category and of these 50% are in China. The organization currently ranks Burj Khalifa in Dubai as the tallest at 828 m. The next highest is the Shanghai Tower at 632 m, the highest in China.

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What is 'passive' or 'incidental' learning?

- Thus we gain knowledge through 'passive' or 'incidental learning' when we discover facts in an unplanned way.
- This information is not as useful or durable in our minds as the same knowledge gained through 'active learning'.

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Is passive learning happening too much when you are studying your lecture notes or textbooks?

Learning styles: Active and Passive

Before we can improve a skill, we firstly evaluate our current style

Currently you may be using a combination of 'active' and 'passive' learning

Compare your current style to the **6 aspects** of effective active learners

Effective active learners

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-

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Do you?

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Evaluate your current learning style

✓ ✓ ✓ ✓ X X > 3 'Yes' = You are an 'active' learner

✓ ✓ X X X X > 3 'No' = You are a 'passive' (incidental) learner

✓ ✓ ✓ X X X 3 'Yes' + 3 'No' = You are developing 'active learner' habits

As we now know, effective active learners

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'Active learning'

Questions stimulate our interest in a topic

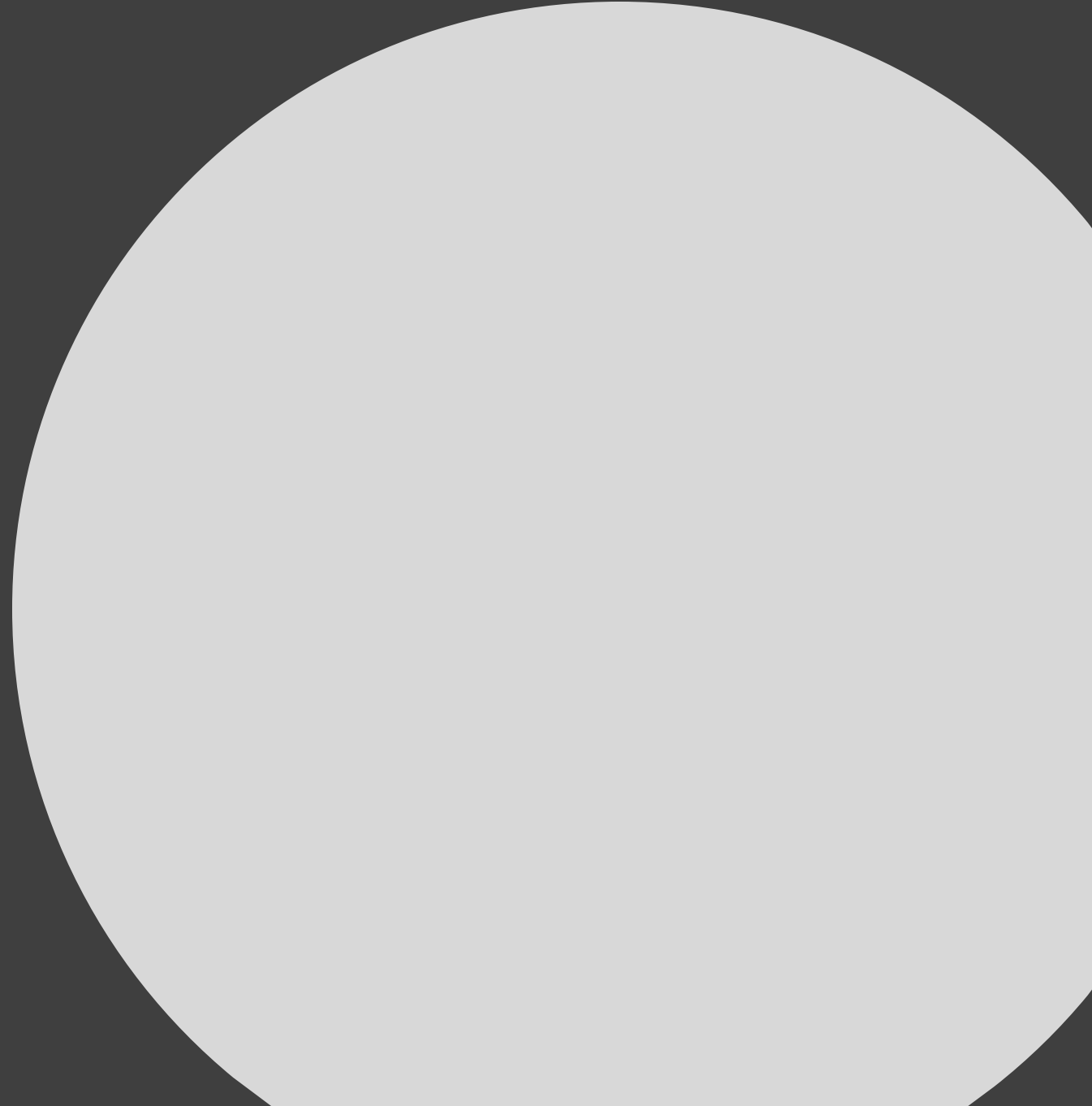
and keep our attention focussed on that topic

Setting questions for yourself is key to effective learning

- ✓ Setting questions for yourself will prepare your mind and make it easier to concentrate when you start to study
- ✓ Asking questions before you read something increases your memory and understanding of the answers you find
- ✓ Having questions written down encourages you to distinguish between the most interesting and the most relevant information, avoiding the danger of getting side-tracked

Active and Passive Learning

Quiz Time !!!



Active and Passive Learning

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Test your memory of facts
recently learned through
active and passive learning

Questions (passive learning)

In what year was the Council on Tall Buildings and Urban Habitat formed?

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1969

Questions (passive learning)

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350 metres

Questions (passive learning)

How high is the tallest building in the world?

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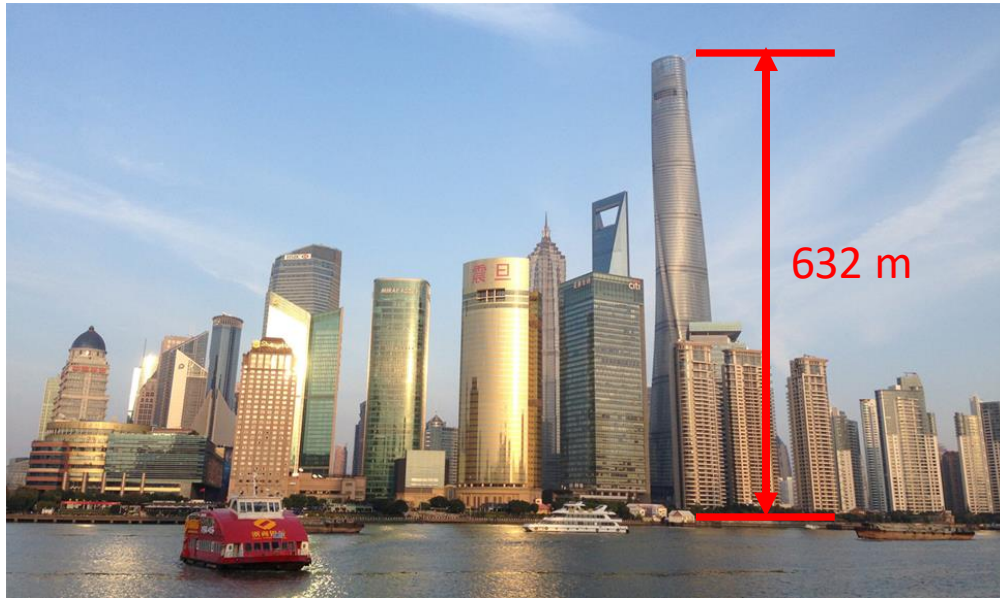
828 metres

Questions (active and passive learning)

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Active Learning

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Passive Learning

'Active learning'

**is built around the skill of
framing questions**

Applying this form of learning to engineering studies

Consider the example of studying some basic principles of physics:

Reflection and Refraction

Studying the phenomena of Reflection and Refraction

'Passive' Learning

- Define reflection
- Define refraction
- Mathematical equations related to reflection and refraction

'Active' Learning

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'Active' Learning

- What causes a rainbow?

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'Active' Learning

- What causes a rainbow?
- What causes a mirage in the form of an apparent pool of water on a roadway on a dry sunny day?

Studying the phenomena of Reflection and Refraction

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'Active' Learning

- What causes a rainbow?
- What causes a mirage in the form of an apparent pool of water on a roadway on a dry sunny day?
- Why are optical fibre cables so effective at transmitting light?

Studying the phenomena of Reflection and Refraction

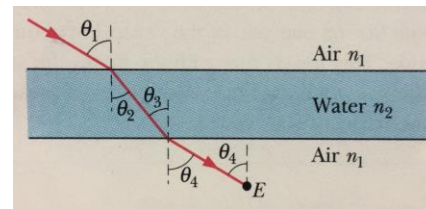
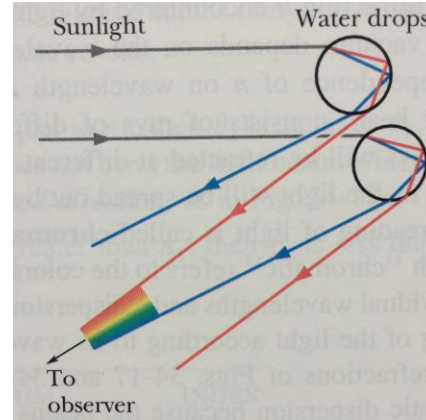
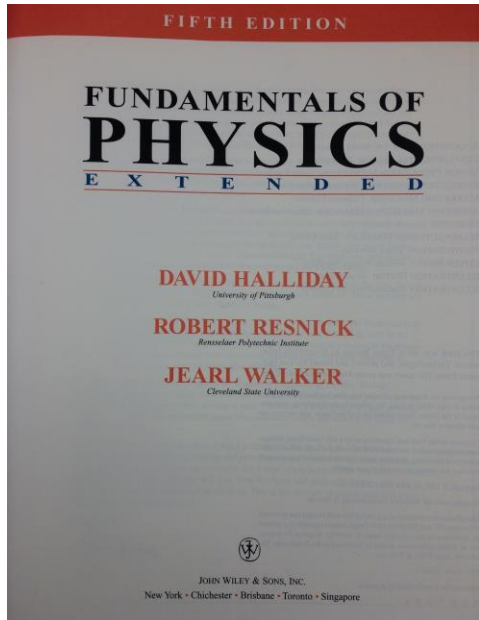
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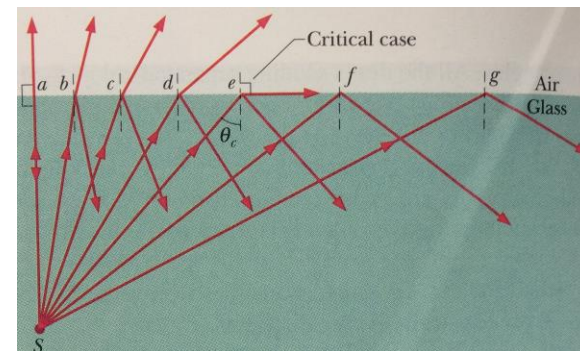
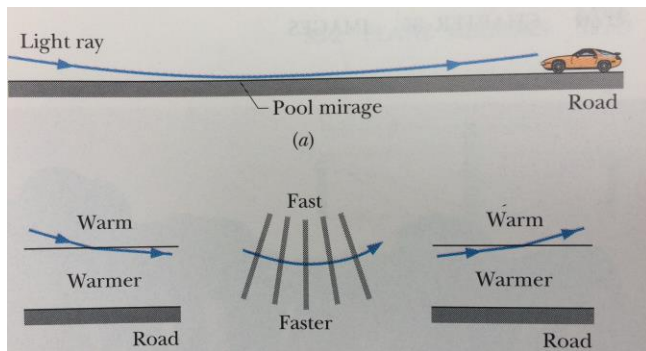
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- Can these phenomena be explained in mathematical terms?

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**The secret of
being an
'active
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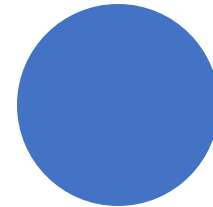
Be curious

Build your learning around questions that you set for yourself

Keep questioning until you have understood

**Try the 'active learning'
approach to your university
experience**

**A set of six talks to get you
started**



**Check these
resources
online,
in your own
time,
at your own
pace**



The 'Active Learning' approach



Getting the most out of a lecture



Reading with purpose



Effective study - Motivation



Effective study - Time management



Concentration – the ability to focus