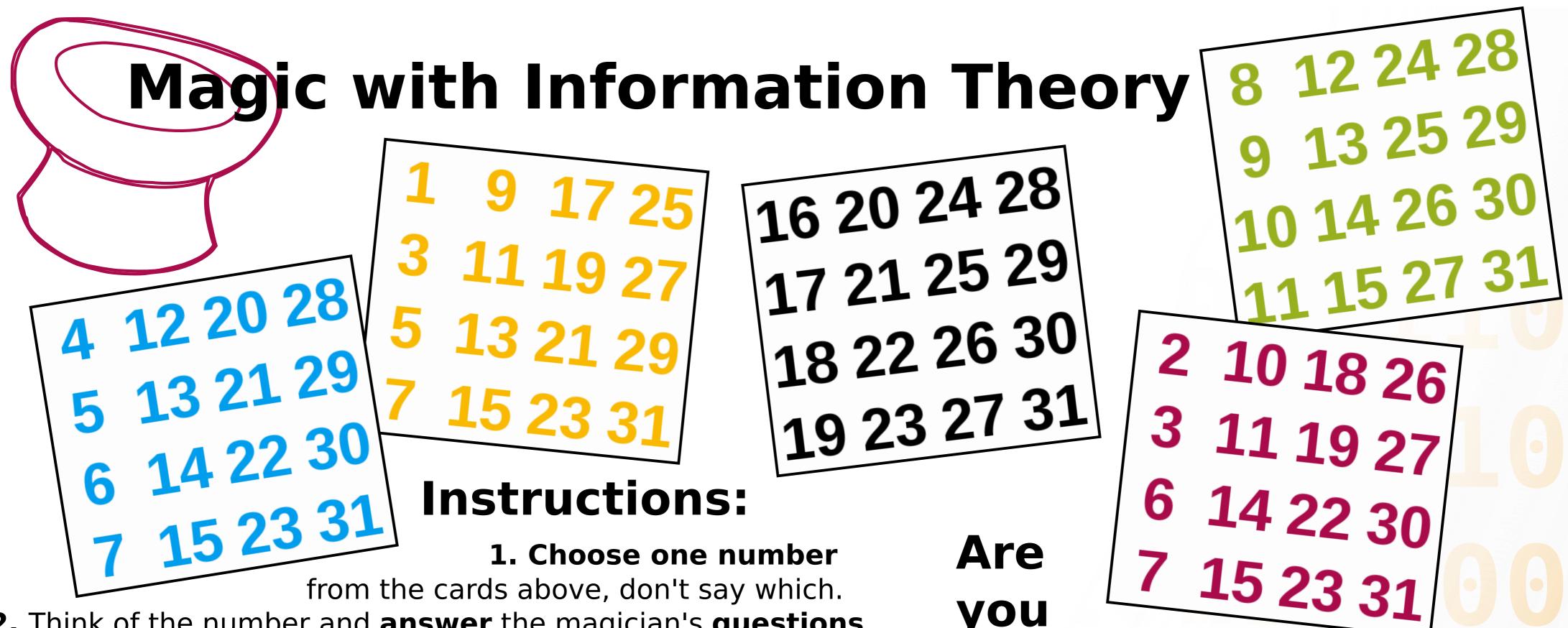


## Inquiry-based learning



2. Think of the number and **answer** the magician's **questions**. **3.** The magician **reads** your **mind** and announces your number. **4.** You may **confirm it**, even though the magician

#### is never wrong.

5. Get amazed, puzzled, and thinking: What has happened?!

And why is a mind trick at Science on Stage?

## Let's use science to reveal the *magic*!

## What matters?

Which role do the **colors** play? Can we ask about the cards in a different **order**? Can we do the trick when **seeing only parts** of the cards? Or when not seeing them at all?

#### What are the sizes?

How many **numbers** are there to be chosen from? How many are on each card? How many cards? Which is the smallest and the biggest number? And on each card? Any numbers **missing**?

Is it even possible to identify one number of so many using so few questions (and telepathy)?

One answer helps us identify one of two objects,

## you a magician?

I have picked a number before printing this poster. I recall it every now and then. Perhaps you can read my mind remotely...

#### Here are the answers to your questions:

Is the number on the yellow card? **YES.** Is the number on the magenta card? **YES.** Is the number on the cyan card? NO. Is the number on the green card? NO. Is the number on the black card? **YES**. So, concentrate on the number in my mind and say: Which one is it?

(I have conjured my number into the last row of this poster, in case you want to check it.)

## **Computer Science** in General Education

two answers one of four, ...

## Ok, but is it possible to work out the number according to the answers **so magically fast**?

You don't think I am actually searching on the cards, do you? Or that I remember which number is on which card?

Why are the numbers **organized** as they are? Could they be organized differently?

Well, perhaps at least 31!/5!-1 more times, don't you think?

What happens under **boundary conditions**? Can you find any **regularities** on (or among) the cards? Can you scale the problem down?

Have you figured it out? Then you can create

Study of efficient information processing Why to teach it? - Substantial discipline with many applications Communication and problem solving skills Google this: "Computational thinking" - Challenges and fun!

often, but

not always

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# your own cards, with even more numbers!

What is it?