

Curriculum design for knowledge building

Why it matters
What it involves

Journey through this session

- Knowledge as meaning
- Knowledge as builder of thinking power
- Metaphor of the box set
- Metaphor of cake
- Same skill, different context
(curriculum *is* the progression)

The purpose of schools

- Not chiefly or mainly to prepare children for exams or jobs.
- Teaching our children about meaning – about what it means to be human

Ashby Ruth (2020) Why it's important to understand school subjects – and how to begin to do so in the ResearchED Guide to the Curriculum.

...the knowledge and skills that pupils need in order to take advantage of opportunities, responsibilities and experiences of later life...

Opportunities, responsibilities and experiences...

- Responsibilities is about employment, economic and social independence, looking after yourself and those who depend on you
- But education is not just about preparing children for jobs and the responsibilities of adult life, as important as these are...
- It's also about opportunities and experiences
- It's about teaching our children about meaning – about what it means to be human.

Custodians, curators and critics

- Through their curriculums, schools are custodians, curators and critics of the magnificent legacy of human meaning-making

The great conversation

- By engaging with humankind's intellectual and cultural heritage, our children are enabled to join in with and continue the great conversation about what things mean that has been taking place since the dawn of time

Building thinking power

- Involves increasing the amount of stuff in long term memory
- Because thinking power is generated by having things in memory that can be connected together
- In other words it involves ensuring there are more things to connect with

What is thinking power?

FLUID INTELLIGENCE

- Processing speed
- Working memory capacity
- Raw reasoning power
- Increases throughout childhood into mid twenties then slowly declines
- Does not rely on prior knowledge
- Is fixed ('nature')
- Is not improved through education

CRYSTALLISED INTELLIGENCE

- The ability to apply stored knowledge
- Increases throughout our lives as we know more
- Is not fixed ('nurture')
- Can be increased through education

Building thinking power

- We can't improve working memory in any generic way that is portable from one area to another
- We **can** give children lots of background knowledge
- This will give them the raw material to reason in complex and creative ways

Building thinking power necessitates building knowledge

Ensuring long term memory is richly stocked

So that we have the raw material of thought

Knowledge is the essential precursor to being able to think

Building thinking power through highly detailed curriculum planning

Rooted in social justice

Meets the needs of all learners, especially those who learning is more school dependent and those with special educational needs

If it's good for SEND learners and school dependent learners, it's likely to be good for all learners



GAME OF
THRONES®

@Mr_AlmondED nutsaboutteaching.wordpress.com

Serials not series

- Main conflict – not resolved until end of series
- Sub plots – resolved at end of each episode
- Hook into next programme
- Seasons – same characters in new adventure
- Can't watch 'one off' and properly make sense of it



GAME OF
THRONES®

Less coherence

more coherence

Sub plot, main plot, story arc

- Sub plot resolved in one lesson
- Main plot resolved in one topic
- Story arc carries on over years (linked to quest for meaning in each subject-disciplinary knowledge)



Coherence: taking
concepts for a walk
across the
curriculum

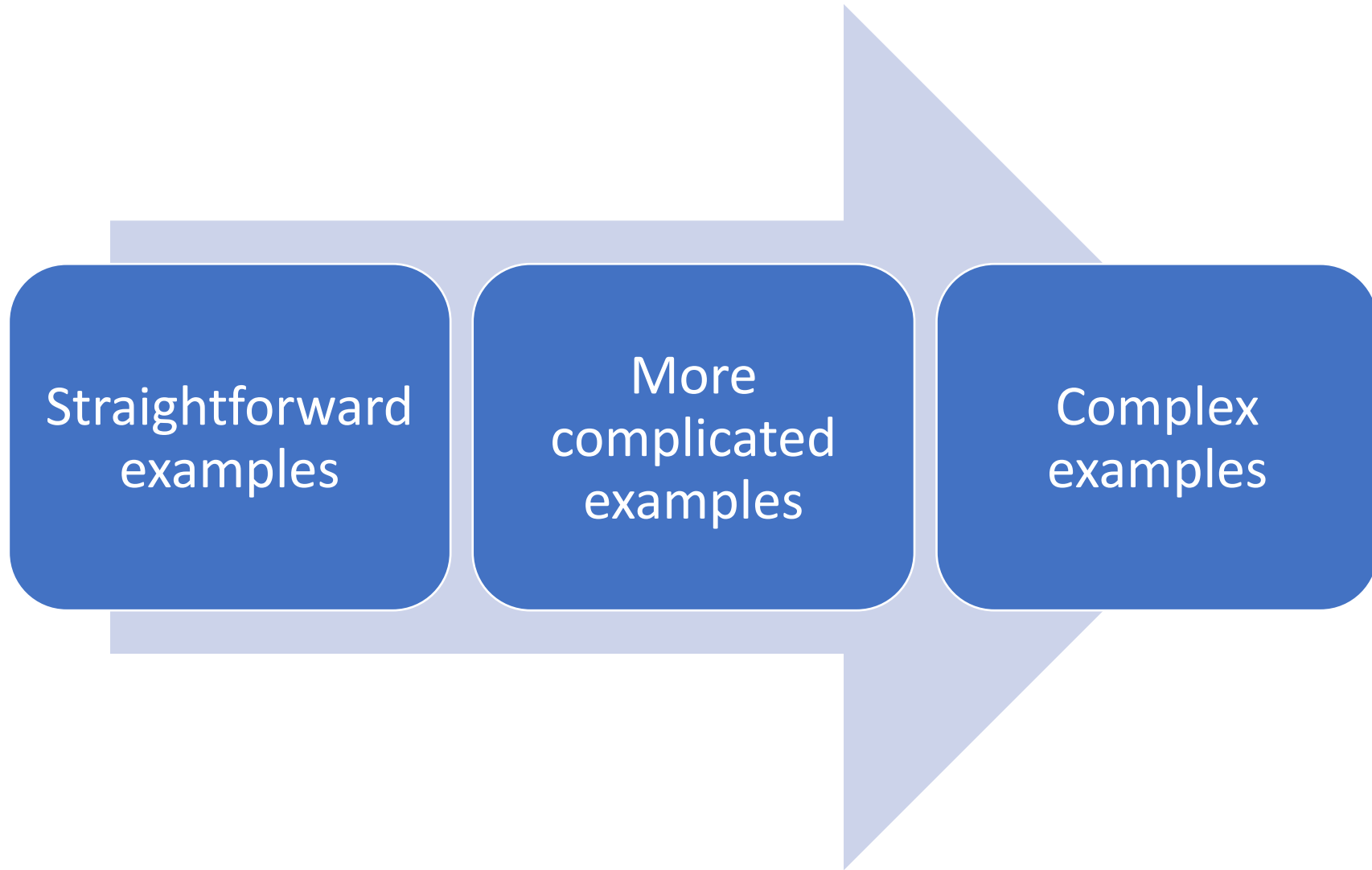
Substantive concepts

- The very 'stuff' our children are learning about
- Not just vocabulary or facts
- Each time we learn a concept in a different setting, our understanding of it becomes denser, more solid, more nuanced

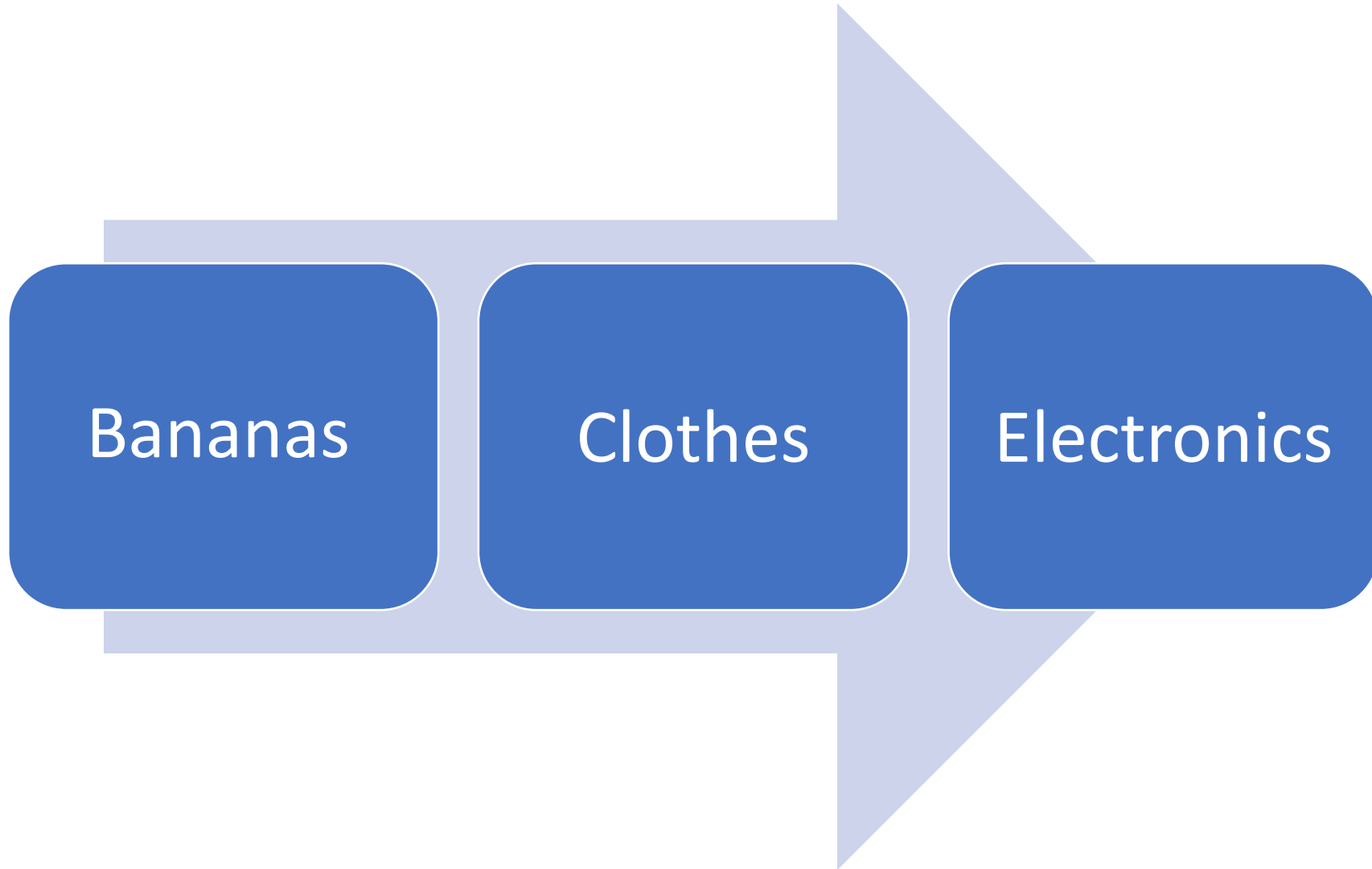
This is what
progress looks
like

- Learning concepts in different settings, so that our understanding of those concepts becomes denser, more solid, more nuanced over time.

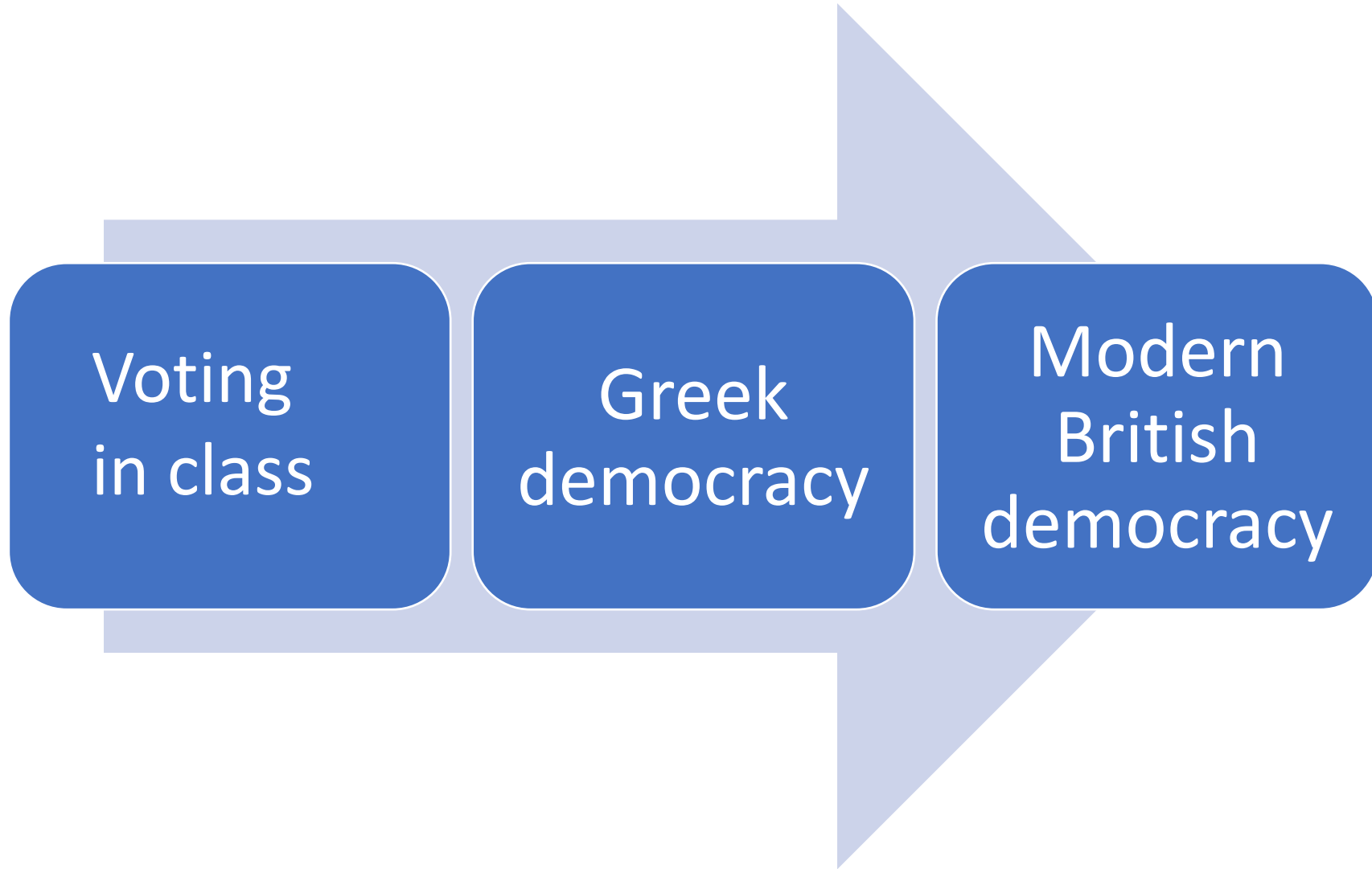
The curriculum as the vehicle for progress



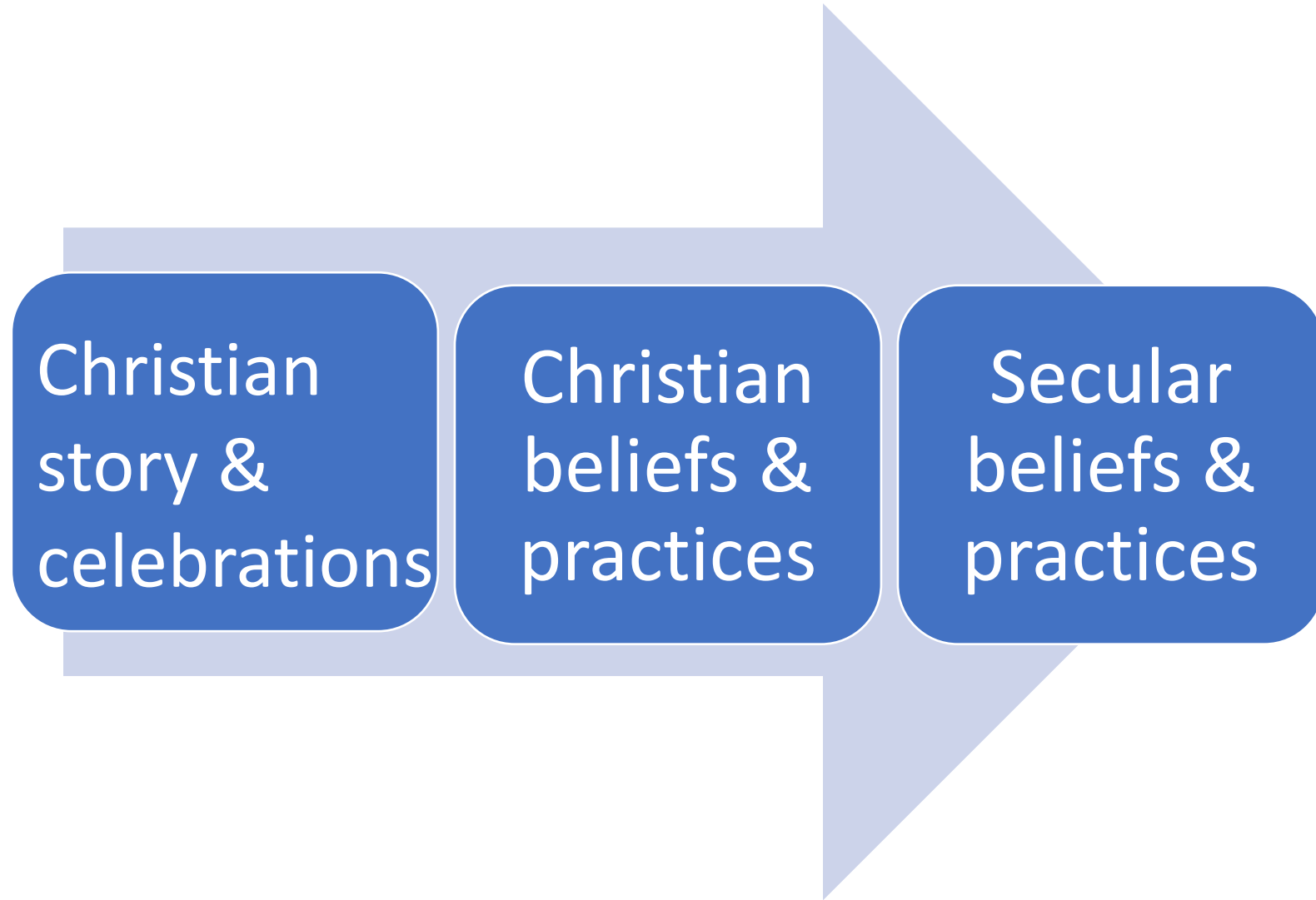
Globalisation: trade



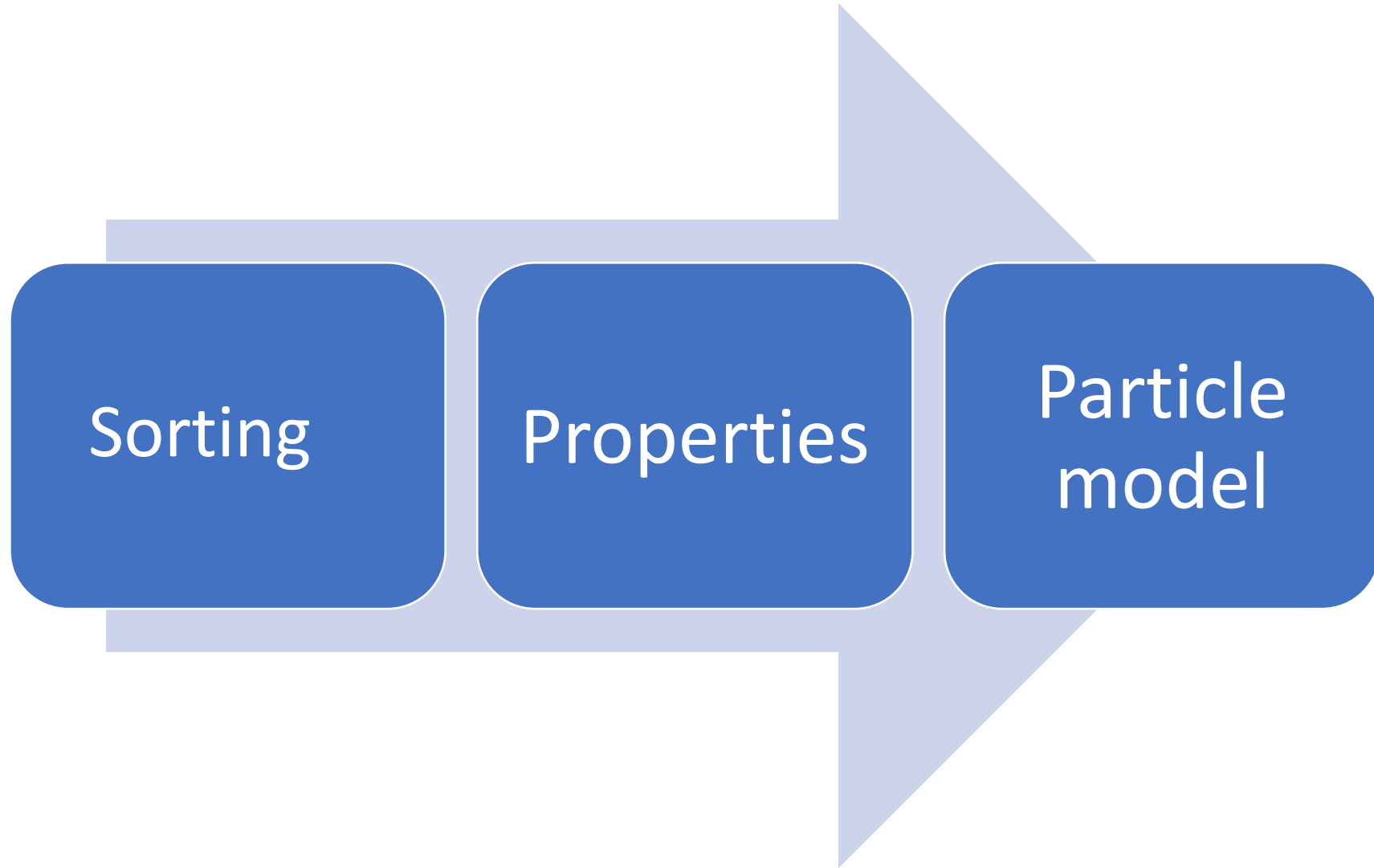
Democracy



Christmas



Materials:



Counting


1:1

1:many

Rational
number
s


Geography high dividend concepts

- *Atmosphere*
- *Climate*
- *Continent*
- *Landscape*
- *Environment*
- *Resources*
- *Biome*
- *Fertile*
- *Water sources*
- *Location*
- *Mapping*
- *Settlement*
- *Population*
- *Globalisation*
- *Trade*
- *Development*
- *Sustainability*
- *Diversity*

Context Concept 	Seas and continents	Local area	Biomes	Urban: rural contrast	Energy
Locational knowledge	Yes	Yes	Yes	Yes	Yes
Map skills		Yes		Yes	
Climate	Yes		Yes		Yes
Landscape			Yes	Yes	Yes
Water: sources & availability	Yes		Yes		Yes
Settlement: (inc. population density)		Yes	Yes	Yes	
Agriculture			Yes	Yes	
Globalisation: (inc. trade & resources)	Yes	Yes		Yes	
Sustainability (inc energy)			Yes		Yes
Development	Yes	Yes		Yes	Yes

History high dividend concepts

- *Civilisation*
- *Culture*
- *Empire*
- *Invasion*
- *Monarchy*
- *Tyranny*
- *Rebellion*
- *Oppression*
- *Opposition*
- *Democracy*
- *Government*
- *Parliament*
- *Society*
- *Community*
- *Taxation*
- *Source*
- *Evidence*
- *Chronology*

Context Concept 	Great Fire of London	Stone Age	Ancient Egypt	Romans	WW2
Chronology	Yes	Yes	Yes	Yes	Yes
Evidence	Yes	Yes	Yes		
Cause/consequence	Yes	Yes		Yes	Yes
Monarchy and government	Yes		Yes	Yes	Yes
Invasion				Yes	Yes
Empire				Yes	Yes
Civilisation			Yes		
Agriculture		Yes	Yes		Yes
Trade			Yes	Yes	Yes

Content and selection

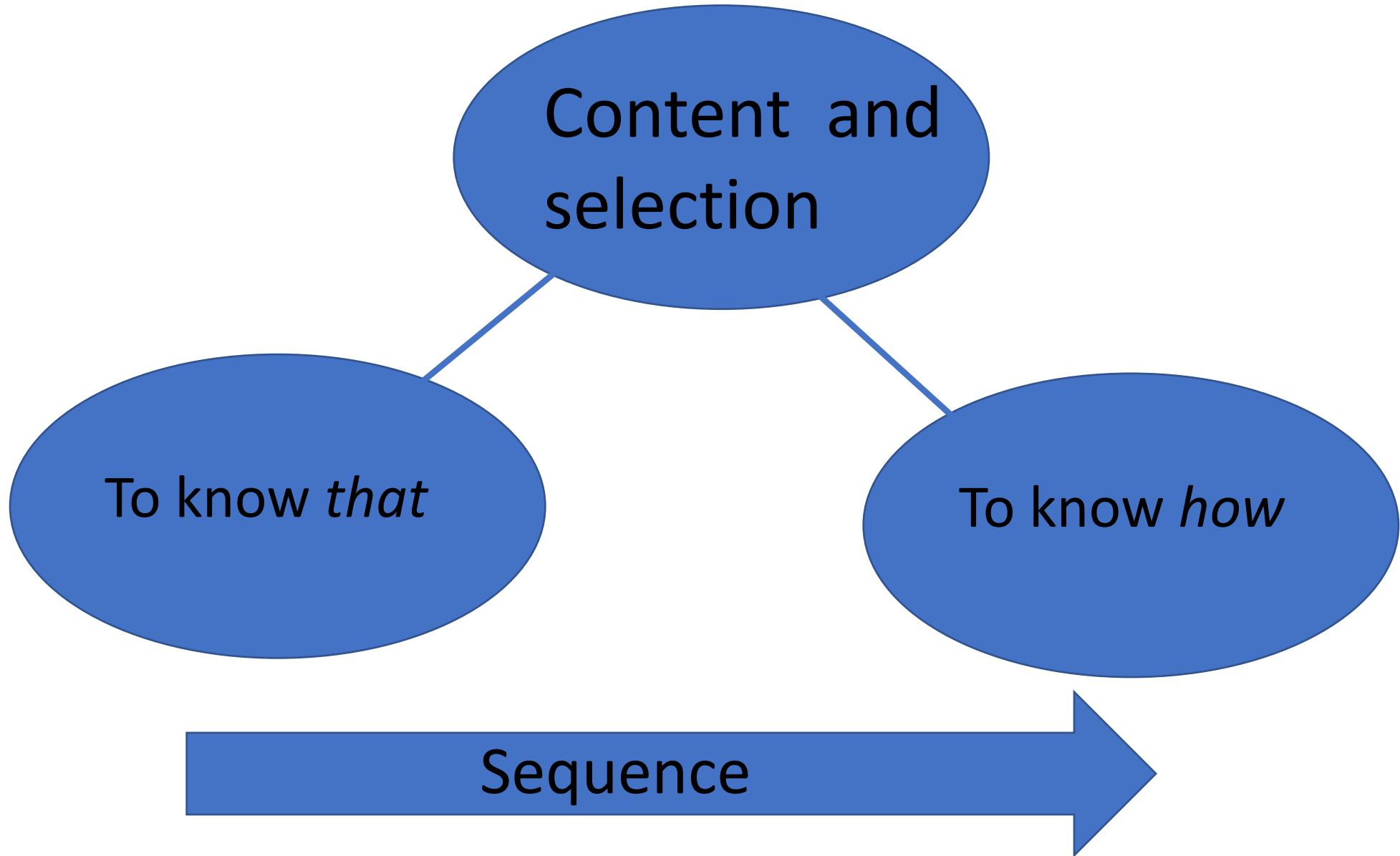


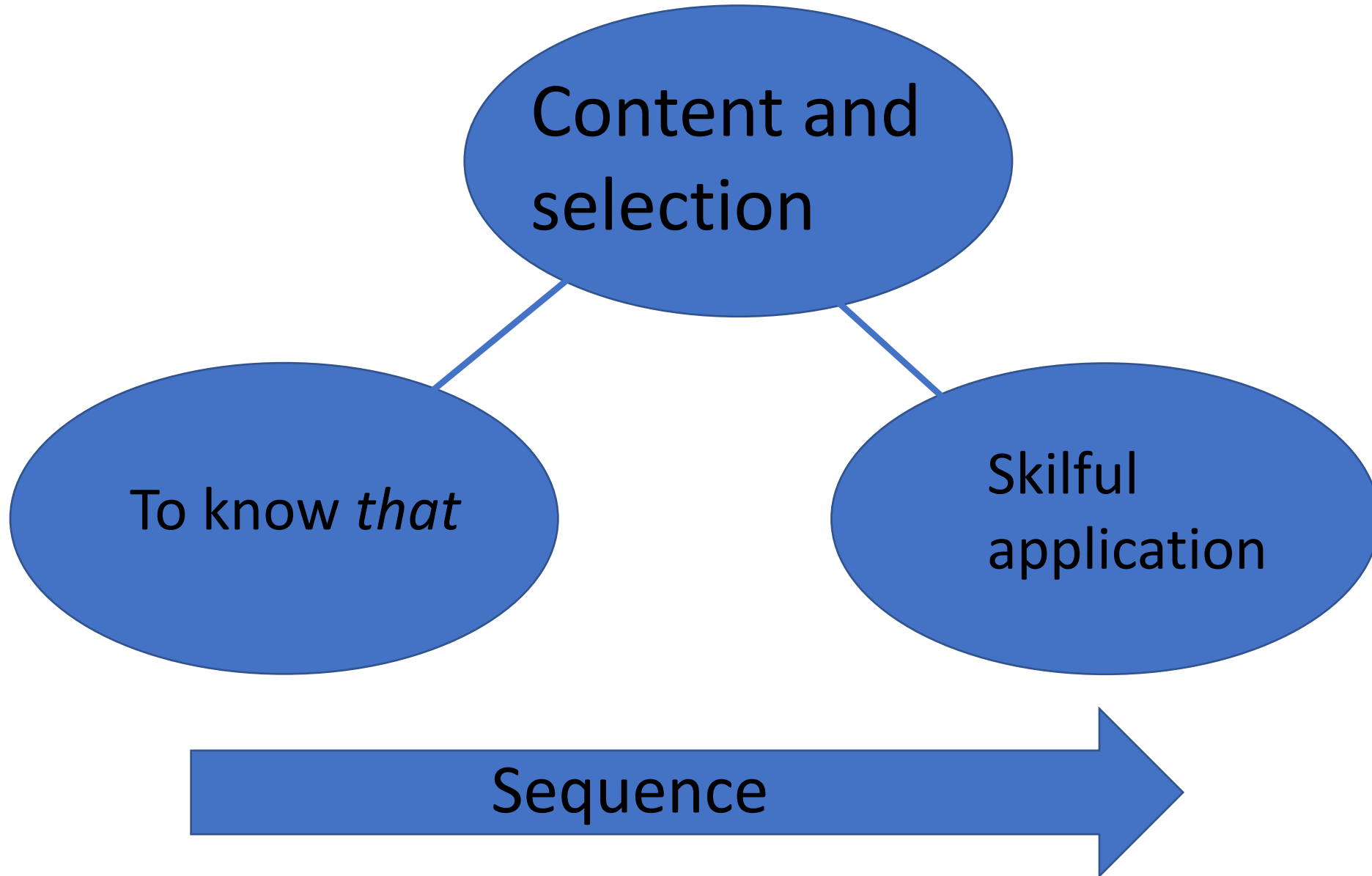
ingredients

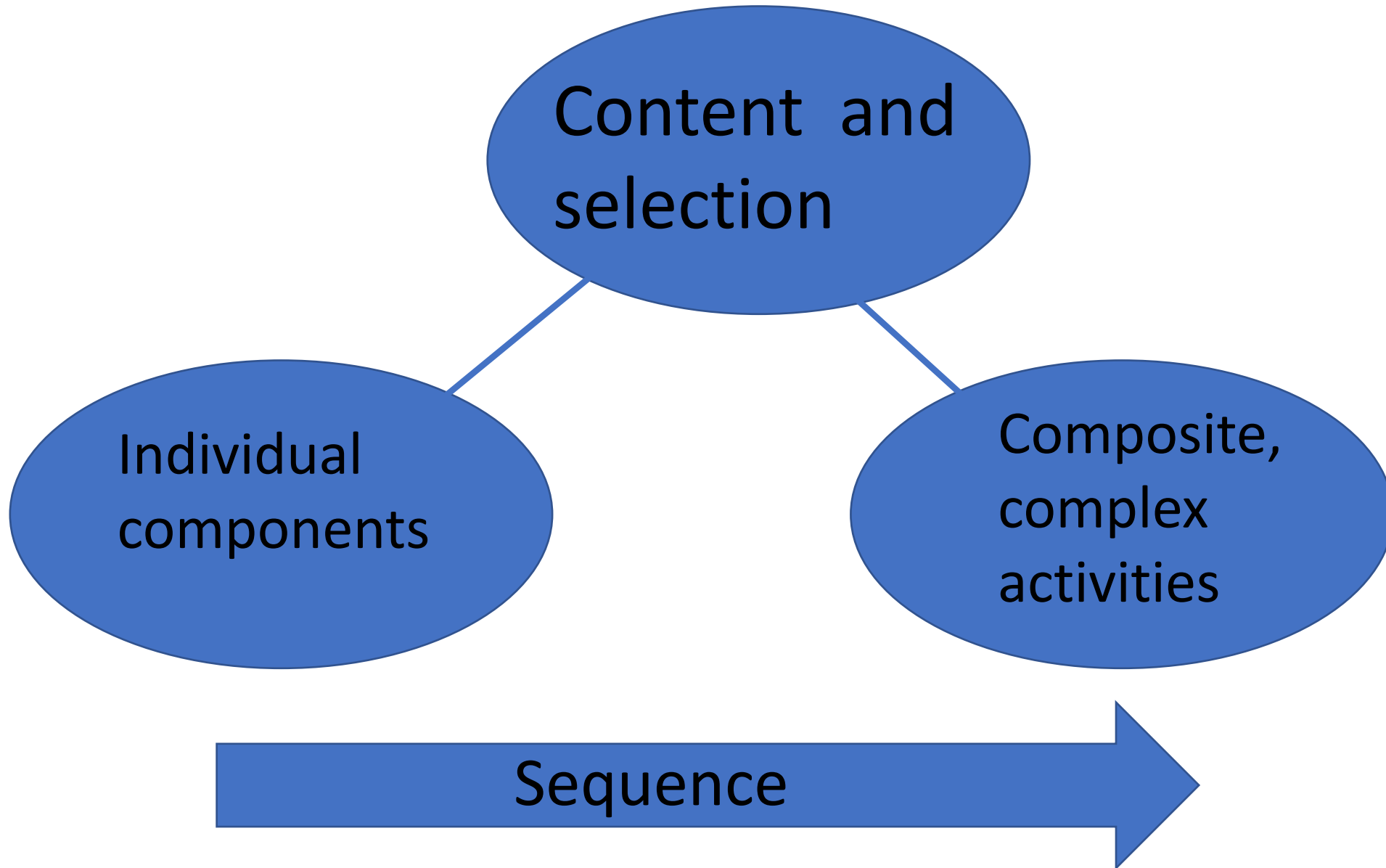


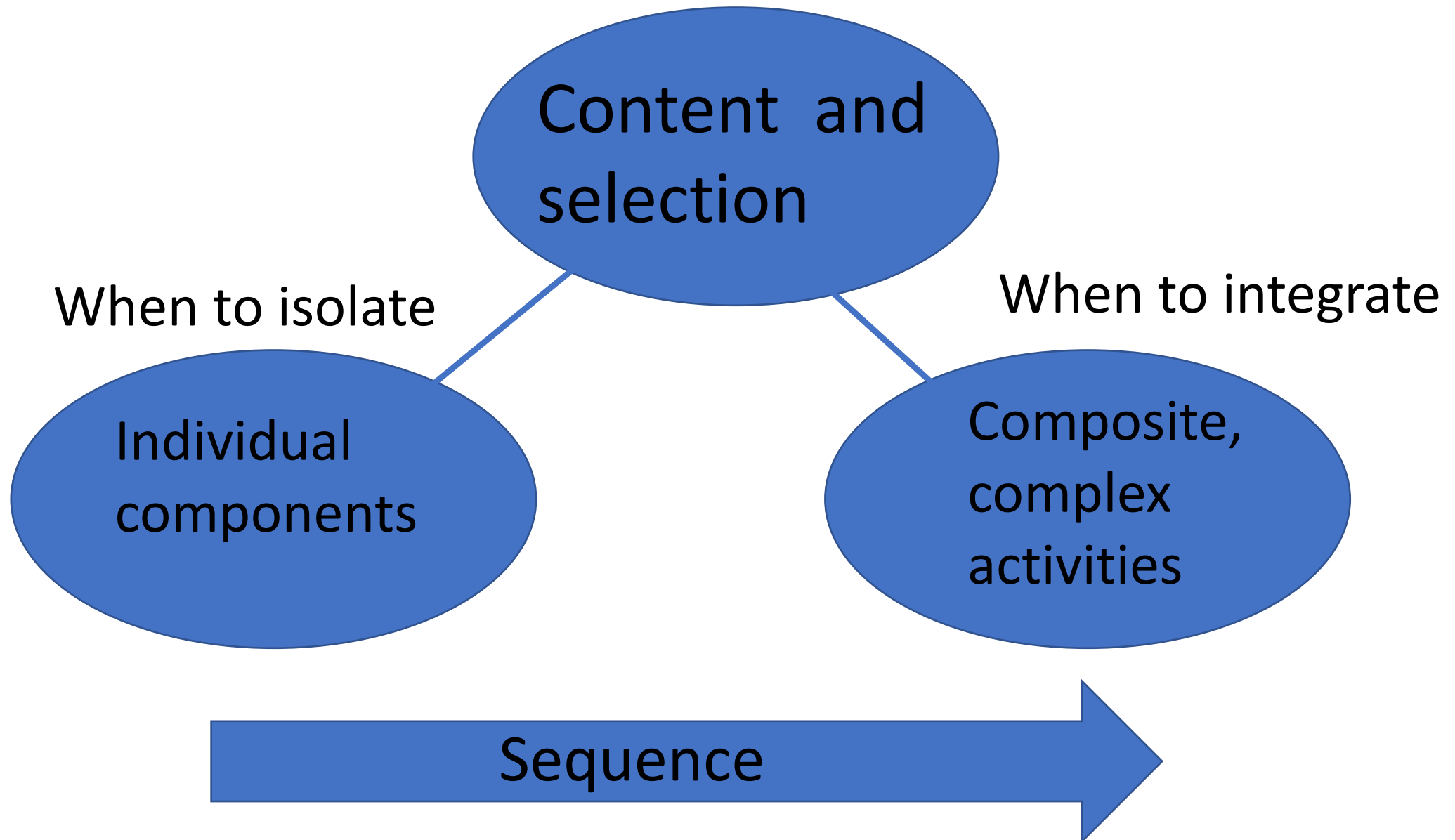
cake

Sequence









Nobody wants to eat raw ingredients

Content and selection



ingredients

It's hard to make a cake without ingredients



cake

Applying same skills in progressively more challenging contexts, with more independence.



Why skills alone cannot describe or enable progress

Early

- **To start to understand** how physical processes affect people and places

Middle

- **To understand** how physical process affect people and places

Bridging

- **To explain** how physical processes can effect people and places

Later

- **To explain in depth** how physical processes affect people and places

The difficulty is context specific

- Same skill: different context
- Flooding easier to understand than ocean circulation systems
- Progression comes from applying the same skill in increasing more challenging contexts over time
- So the curriculum bakes in progression by planning concepts of increasing conceptual difficulty over time

Progression within a topic

Start of topic

- **To start to understand** how physical processes affect people and places

Middle of topic

- **To understand** how physical process affect people and places

Middle of topic

- **To explain** how physical processes can effect people and places

End of topic

- **To explain in depth** how physical processes affect people and places

Inference:



Rosie's
Walk

Varjak
Paw

Macbeth