SHIRELAND
COLLEGIATE ACADEMY TRUST

L4L Coverage Map: Science

Science

- A high-quality science education provides the foundations for understanding the world through the specific disciplines of biology, chemistry and physics. Science has changed our lives and is vital to the world's future prosperity, and all pupils should be taught essential aspects of the knowledge, methods, processes and uses of science. Through building up a body of key foundational knowledge and concepts, pupils should be encouraged to recognise the power of rational explanation and develop a sense of excitement and curiosity about natural phenomena. They should be encouraged to understand how science can be used to explain what is occurring, predict how things will behave, and analyse causes.

Department for Education: **Science programmes of study: key stage 3 National curriculum in England 2013**

Science

- The coverage of the science competencies and national curriculum programmes of study demonstrated in this document aim to compliment and supplement the schemes of learning undertaken in discrete science lessons in Key Stage Three. The science learning undertaken in L4L provides opportunities for the consolidation and/or extension of learning. This approach to the delivery of the science curriculum provides a greater breadth to our students whilst also allowing students to make connections between their learning.

Competencies linked to the National Curriculum

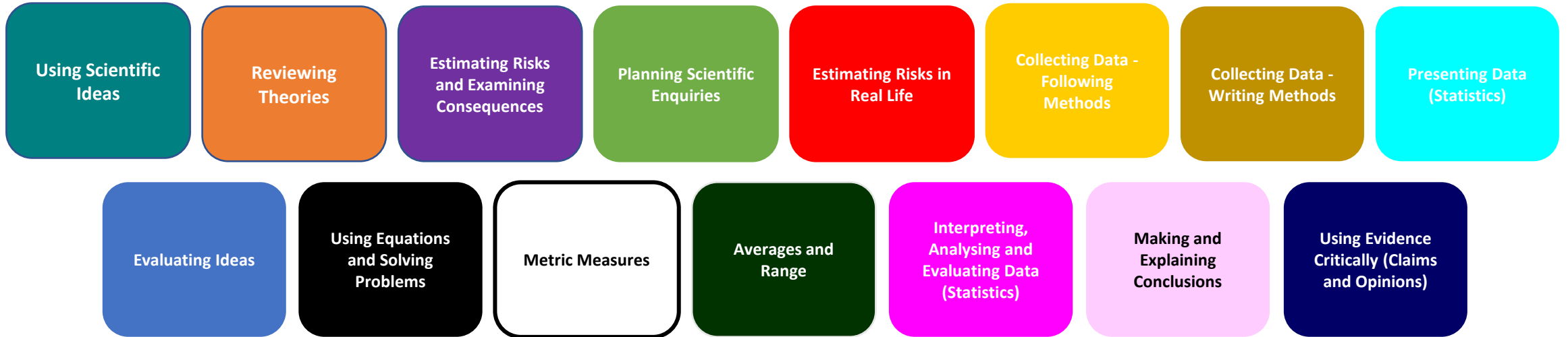|	
The national curriculum for science aims to ensure that all pupils:	
Develop scientific knowledge and conceptual understanding through the specific disciplines of biology, chemistry and physics.	SC.CS.01 Using Scientific Ideas
Develop understanding of the nature, processes and methods of science through different types of science enquiries that help them to answer scientific questions about the world around them.	SC.CS.02 Reviewing Theories
	SC.CS.03 Estimating Risks and Examining Consequences
	SC.ES.01 Planning Scientific Enquiries
	SC.ES.02 Estimating Risks in Real Life
	SC.ES.03 Collecting Data - Following Methods
	SC.ES.04 - Collecting Data - Writing Methods
	SC.PE.05 Evaluating Ideas
	SC.MS.01 Using Equations and Solving Problems
	SC.MS.02 Metric Measures
	SC.MS.03 Averages and Range
	SC.PE.01 Presenting Data (Statistics)
	SC.PE.02 Interpreting, Analysing and Evaluating Data (Statistics)
	SC.PE.03 Making and Explaining Conclusions
Are equipped with the scientific knowledge required to understand the uses and implications of science, today and for the future.	SC.PE.04 Using Evidence Critically (Claims and Opinions)

Science Competencies

Using Scientific Ideas	Reviewing Theories	Estimating Risks and Examining Consequences	Planning Scientific Enquiries	Estimating Risks in Real Life	Collecting Data - Following Methods	Collecting Data - Writing Methods	Presenting Data (Statistics)
Evaluating Ideas	Using Equations and Solving Problems	Metric Measures	Averages and Range	Interpreting, Analysing and Evaluating Data (Statistics)	Making and Explaining Conclusions	Using Evidence Critically (Claims and Opinions)	

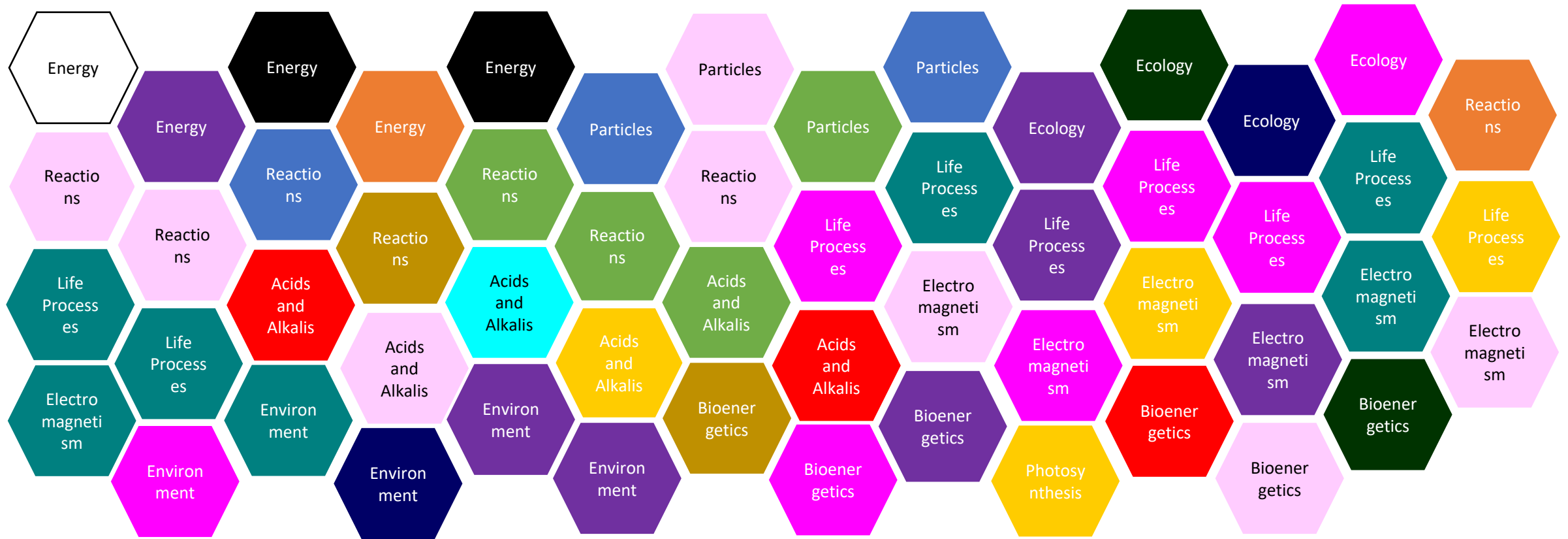# This heat map demonstrates the distribution of Scientific competencies delivered in discrete Science lessons in Y7.
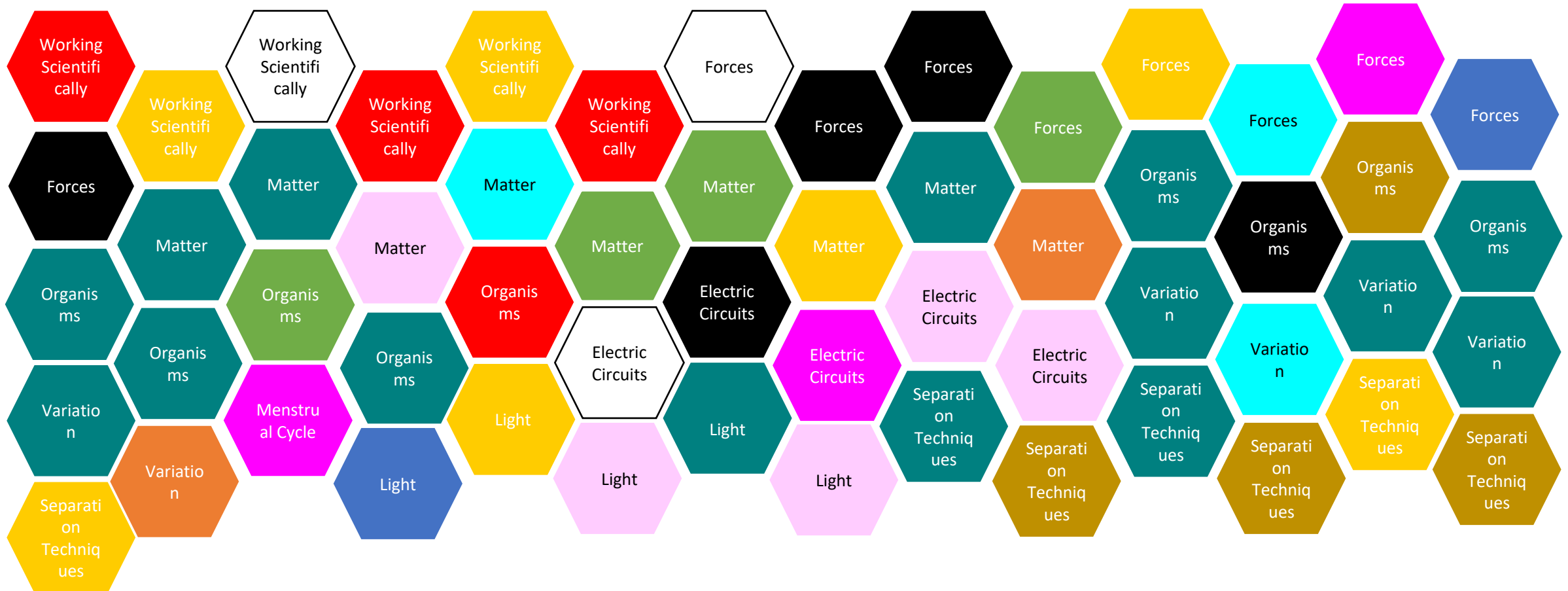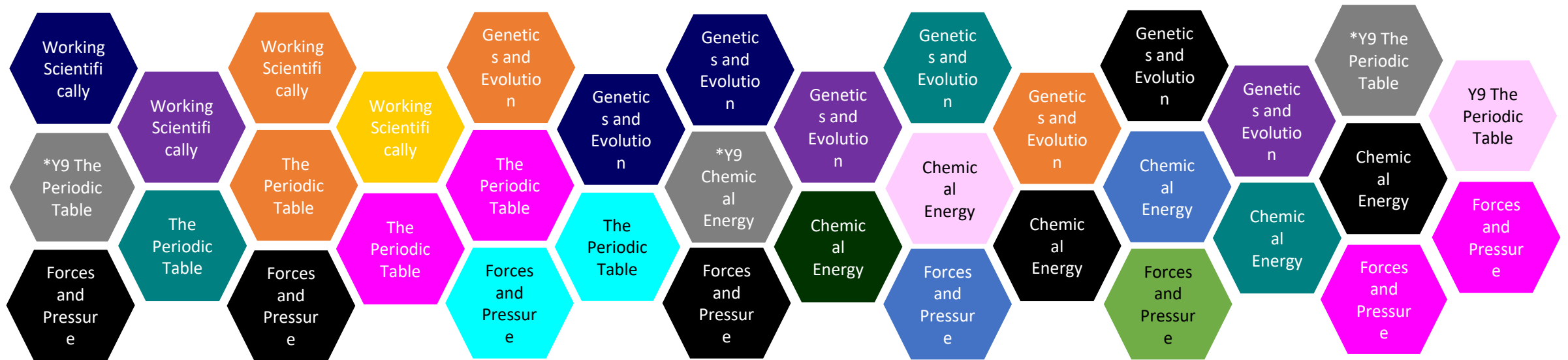
This heat map demonstrates the distribution of Scientific competencies delivered in discrete Science lessons in Y8.

This heat map demonstrates the distribution of Scientific competencies delivered in discrete Science lessons in Y9.
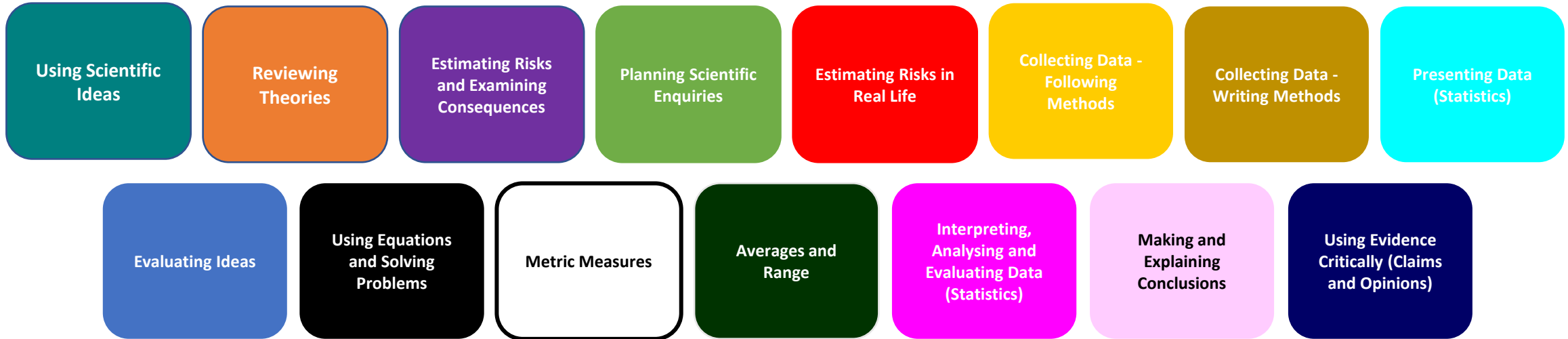
Scientific Competencies delivered in discrete KS3 Science lessons.

	Y7	Y8	Y9
SC.CS.01 Using Scientific Ideas	Matter, Organisms, Variation, Light, Separation Techniques	Life Processes, Electromagnetism, Environment	Genetics and Evolution, The Periodic Table, Chemical Energy
SC.CS.02 Reviewing Theories	Matter, Variation	Energy, Reactions	Working Scientifically, Genetics and Evolution, The Periodic Table
SC.CS.03 Estimating Risks and Examining Consequences		Energy, Ecology, Life Processes, Electromagnetism, Environment. Bioenergetics	Working Scientifically, Genetics and Evolution
SC.ES.01 Planning Scientific Enquiries	Forces, Matter, Organisms	Particles, Reactions, Acids and Alkalis	Forces and Pressure
SC.ES.02 Estimating Risks in Real Life	Working Scientifically, Organisms	Acids and Alkalis, Bioenergetics	
SC.ES.03 Collecting Data - Following Methods	Working Scientifically, Forces, Matter, Light, Separation Techniques	Life Processes, Acids and Alkalis, Electromagnetism, Photosynthesis	Working Scientifically
SC.ES.04 - Collecting Data - Writing Methods	Organisms, Separation Techniques	Reactions, Bioenergetics	
SC.PE.05 Evaluating Ideas	Forces, Light	Particles, Reactions	Chemical Energy, Forces and Pressure
SC.MS.01 Using Equations and Solving Problems	Forces, Organisms, Electric Circuits	Energy	Genetics and Evolution, Chemical Energy, Forces and Pressure
SC.MS.02 Metric Measures	Working Scientifically, Forces, Electric Circuits	Energy	
SC.MS.03 Averages and Range		Ecology, Bioenergetics	Chemical Energy
SC.PE.01 Presenting Data (Statistics)	Forces, Matter, Variation	Acids and Alkalis	The Periodic Table, Forces and Pressure
SC.PE.02 Interpreting, Analysing and Evaluating Data (Statistics)	Forces, Menstrual Cycle, Electric Circuits	Ecology, Life Processes, Electromagnetism, Environment, Bioenergetics	The Periodic Table Forces and Pressure
SC.PE.03 Making and Explaining Conclusions	Matter, Electric Circuits, Light	Particles, Reactions, Acids and Alkalis, Electromagnetism, Bioenergetics	The Periodic Table, Chemical Energy
SC.PE.04 Using Evidence Critically (Claims and Opinions)		Ecology, Environment	Working Scientifically, Genetics and Evolution

Where does Science appear in L4L themes?

Using Scientific Ideas

Reviewing Theories

Estimating Risks and Examining Consequences

Planning Scientific Enquiries

Estimating Risks in Real Life

Collecting Data - Following Methods

Collecting Data - Writing Methods

Presenting Data (Statistics)

Evaluating Ideas

Using Equations and Solving Problems

Metric Measures

Averages and Range

Interpreting, Analysing and Evaluating Data (Statistics)

Making and Explaining Conclusions

Using Evidence Critically (Claims and Opinions)

JTTCOTE - Yr7|Aut

iRobot - Yr7|Spr

Growing - Yr7|Spr

Water - Yr7|Sum

Silent Movies - Yr7/Sum

Pudding Lane - Yr8/Aut

Grand Designs - Yr8/Aut

Da Vinci - Yr8/Spr

This heat map demonstrates the distribution of Scientific competencies across L4L.

Scientific Competencies in L4L lessons

Competency	Lesson	Topic
Using Scientific Ideas	JTTCOTE	Our Place in the Universe The Moving Earth The Structure of the Earth The Changing Earth
	iRobot	What is a Robot? Electrical circuits
	Growing	How And Why do plants grow? Brain Development
	Water	What is Water? Coral Reefs
	Silent Movies	The Science of Light and Sound
	Pudding Lane	Outbreak: Spread of disease Dealing with disaster
	Grand Designs	Materials science
	Da Vinci	Anatomy
Reviewing Theories	JTTCOTE	How have ideas changed
	iRobot	Electrical Safety and Wiring a Plug Life Processes and Prosthetic design
Interpreting, Analysing and Evaluating Data (Statistics)	JTTCOTE	The moving earth
	Growing	How can we measure population growth?

Competency	Lesson	Topic
Estimating Risks and Examining Consequences	Water	Water Pollution
Making and Explaining Conclusions	Growing	Microorganisms experiment: Part 2
	Water	Water Forms and solutions
Evaluating Ideas	Da Vinci	Decoding Vitruvian Man
Collecting Data - Following Methods	Growing	Microorganisms experiment: Part 2
	Da Vinci	Decoding Vitruvian Man
Using Equations and Solving Problems	JTTCOTE	Gravity, weight and Mass
	Grand Designs	Energy Efficiency
Planning Scientific Enquiries	Growing	Microorganisms experiment: Part 1
	Water	Water Forms and solutions