Subject: Computing **Year: 9** **Term: 1.2**

Title of Scheme of Learning:	Overview of topic:	How does this SOL relate to previous schemes?	Common Misconceptions in the unit:
Vector Graphics (Inkscape)	Vector Graphics – Pupils develop their understanding of vector and bitmap images, then use Inkscape to create and modify scalable digital artwork. Through guided practice and increasingly independent tasks, they learn to manipulate shapes, align and group objects, edit paths and nodes, and apply these skills to a client design brief. Pupils plan, produce, refine and evaluate a logo, website icon set or illustrated character. **Key Skills to be covered:** • Distinguish vector and bitmap/raster graphics and identify suitable uses • Navigate Inkscape; draw, resize, recolour and rotate vector shapes • Select multiple objects; align, distribute, group and ungroup • Use the Bezier, freehand and Node tools; convert shapes to paths • Interpret a client brief and plan an original vector product • Save an editable SVG and review suitability at different sizes • Test against success criteria, obtain peer feedback and improve a design **SMSC/PSHE/CV/Catholic Social Teaching Overview:** Creative expression and pride in purposeful digital work (S). Constructive feedback, respect for others' designs and responsible use of visual assets (M/S). Awareness that imagery should represent audiences appropriately (C/CST). Careers links to graphic design, web/UX design and illustration (CV).	• Builds on Year 7 Digital Graphics, including image types, composition and visual communication. • Extends planning, audience awareness and evaluation from the Year 9 SuperTeams video-editing project. • Applies existing file management and digital portfolio skills to a new design application. **Next topic:** Python programming. **Links to Future Learning** • KS4 vocational ICT and creative media: client briefs, digital graphics, preparation of assets and evaluation. • GCSE Computer Science: digital image representation and file formats. • Further creative projects: branding, icon design, digital publishing and user-centred design. • Careers: graphic designer, web/UX designer, illustrator and digital marketer.	**Misconception: Vectors are made from pixels.** Reality: Vectors are defined using paths and shapes; bitmap images use pixels. **Misconception: Enlarging any image keeps it sharp.** Reality: Vectors can be scaled without pixelation; raster images may lose clarity. **Misconception: Grouping and combining shapes are the same.** Reality: Grouping keeps separate objects together; combining paths changes the geometry. **Misconception: Objects must be drawn in the right order.** Reality: Z-order can be changed to move objects in front of or behind others. **Misconception: More detail always improves a logo.** Reality: A clear, simple design may work better, especially at small sizes. **Misconception: A design is finished when it looks good.** Reality: It must meet the client's requirements and be tested and improved.

Learning episodes (inc no. of lessons)	Learning Question(s) & Key Vocabulary	Content *(What should be covered and planned time for pupils to respond to feedback)*	Feedback & Assessment Points *(Including assessment methods and opportunities to respond to feedback)*
1	How can we use vector tools to create and modify shapes? Vocabulary • Vector / bitmap • Shape tool • Ellipse • Polygon • Fill • Z-order	• Recall familiar digital graphics and compare a vector image with a bitmap at different sizes. • ACTIVATE: model and practise rectangles, ellipses, stars and polygons, including changing a polygon's number of corners. • Demonstrate movement, resizing, colour and object order through a simple illustrated example. • DEVELOP: independently design a recognisable illustration (e.g. an animal, robot or landscape) from multiple shapes.	• Teacher questions and live checks during both ACTIVATE demonstrations. • E-portfolio evidence: one screenshot of four practised shapes and one of the independent illustration. • Pupils answer three short questions on vector/bitmap graphics and tools; self-check and correct misconceptions (5 minutes).
2	How can we position and manage multiple vector objects? Vocabulary • Selection • Alignment • Distribution • Group • Ungroup • Object	• Recall shape tools and the difference between an individual object and several selected objects. • ACTIVATE: select multiple shapes, use Align and Distribute to arrange repeated shapes accurately, and demonstrate grouping and ungrouping. • Guided example: create and align a caterpillar; duplicate a grouped design and change individual objects. • DEVELOP: independently create a design using accurate spacing and grouping; optional extension introduces combining shapes.	• Mini-check: compare uneven and evenly distributed objects; explain when grouping is useful. • E-portfolio screenshot of aligned objects and a second image demonstrating a group or duplicated design. • Peer check of spacing and grouping; 5 minutes to respond by adjusting objects and recording a change.
3	How can paths and nodes create more detailed vector designs? Vocabulary • Path • Node • Bezier tool • Freehand • Curve • Object to Path	• Review selecting and modifying shapes, then explain paths as editable lines/curves controlled by nodes. • ACTIVATE: draw straight, curved and freehand paths; select and move nodes using the Node tool. • Follow a completed worked example of a simple superhero face, including a customised head shape, mask and emblem. • DEVELOP: personalise the superhero independently by adapting the mask, colours, features and emblem.	• Question pupils about the difference between a shape, a path and a node while modelling. • E-portfolio: screenshot of path practice and final personalised superhero with a brief explanation of one node edit. • Teacher/pupil comparison with success criteria; allow 5 minutes to refine unclear features.

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4	How do designers plan a vector product for a client? Vocabulary • Client • Brief • Target audience • Logo • Icon • Illustration • Design plan	• Introduce three client options: Solar City space-park logo; matching zoo navigation icons; Carlos/Fiona children's-book illustration. • Read the requirements and identify audience, purpose, constraints and success criteria before designing. • ACTIVATE: short skills refresher and explanation of annotated visual planning; choose one brief. • DEVELOP: produce an annotated design plan, identify intended Inkscape tools and create a first draft. Core outcomes: one logo, three icons or one character.	• Check that each pupil can explain the intended audience and two client requirements. • E-portfolio includes chosen brief, annotated plan and screenshot of the first draft. • Mid-project teacher feedback on fitness for purpose; pupils update their plan or first draft (5–10 minutes).
5	How can we refine a vector design to meet its brief? Vocabulary • Refine • Legibility • Scalability • Consistency • SVG • Criteria	• Recall the chosen client brief and review whether the first draft meets its requirements. • ACTIVATE: model checking a design for clarity, appropriate detail and readability at different sizes. • DEVELOP: continue and complete the product, applying skills from Lessons 1–3. Save an editable SVG and record the final design. • Stretch: a second Solar City variation, six matching zoo icons or both illustrated story characters.	• Teacher circulates with a short client-brief checklist and gives targeted oral feedback. • Pupils test at larger and smaller display sizes and record a specific improvement. • E-portfolio shows draft/final images and a short explanation of the change made; allow 5–10 minutes to act on feedback.
6	How do creative professionals evaluate and improve their designs? Vocabulary • Graphic designer • Web/UX designer • Illustrator • Peer review • Evaluation • Feedback	• RECALL/ACTIVATE: link the three project briefs to real careers in graphic design, web/UX design and illustration. • Model professional evaluation: checking purpose, target audience, client requirements, technical quality and appearance at different sizes. • DEVELOP: pupils review their own design against the brief, exchange constructive peer feedback and identify or make one justified improvement. • Complete the final e-portfolio evaluation: strengths, technical skills, difficulties overcome, improvements and careers relevance.	• End-of-unit practical assessment of final product and evidence against the chosen brief and taught techniques. • Documented peer feedback and self-evaluation in the e-portfolio; pupils identify MET / PARTLY / NOT YET with reasons. • Approximately 10 minutes to respond to feedback and finalise work. Teacher samples portfolio answers to assess understanding; no separate formal test specified.