ST GEORGE'S CHURCH OF ENGLAND ACADEMY

DESIGN AND TECHNOLOGY

Secondary

Year 6

SUMMER
TEXTILES COMBINING DIFFERENT FABRIC SHAPES
KNOWLEDGE:• UNDERSTAND THAT 3D TEXTILE PRODUCTS ARE MADE USING ACCURATE PATTERN PIECES AND FABRIC SHAPES.• KNOW FABRICS CAN BE STRENGTHENED, STIFFENED AND REINFORCED.
CONCEPTS:• USER, FUNCTIONALITY, AUTHENTICITY.
SKILLS:• ACCURATELY MEASURE, MARK OUT, CUT, SHAPE, ASSEMBLE AND JOIN MATERIALS.• APPLY FINISHING TECHNIQUES (E.G., STITCHING, APPLIQUÉ).

SPRING
KNOWLEDGE:• USE APPROPRIATE TOOLS TO PREPARE AND COMBINE FOOD.• UNDERSTAND SEASONALITY AND WHERE FOOD COMES FROM.
CONCEPTS:• USER, DESIGN DECISIONS, INNOVATION.
SKILLS:• FOLLOW HYGIENE RULES.• COOK A SAVOURY DISH USING HEAT.• TECHNIQUES: PEELING, CHOPPING, SLICING, GRATING, MIXING.

AUTUMN
ELECTRICAL SYSTEMS MONITORING AND CONTROL
KNOWLEDGE: UNDERSTAND AND USE ELECTRICAL SYSTEMS IN THEIR PRODUCTS. UNDERSTAND THE USE OF COMPUTER CONTROL SYSTEMS IN PRODUCTS. APPLY THEIR UNDERSTANDING OF COMPUTING TO PROGRAM, MONITOR AND CONTROL THEIR PRODUCTS.
CONCEPT: PURPOSE, FUNCTIONALITY AND INNOVATION
SKILLS: ACCURATELY USE, MEASURE, MARK OUT, CUT, SHAPE, ASSEMBLE, JOIN AND COMBINE MATERIALS AND COMPONENTS. WRITE A SEQUENCE OF INSTRUCTIONS WHERE A DECISION IS MADE. E.G. WHEN A SWITCH IS PRESSED, A BUZZER IS ACTIVATED

Year 5

SUMMER
MECHANICAL SYSTEMS PULLEYS AND GEARS
KNOWLEDGE: UNDERSTAND THAT MECHANICAL AND ELECTRICAL SYSTEMS HAVE AN INPUT, PROCESS AND AN OUTPUT. UNDERSTAND HOW GEARS AND PULLEYS CAN BE USED TO SPEED UP, SLOW DOWN OR CHANGE THE DIRECTION OF MOVEMENT.
CONCEPT: USER, PURPOSE, INNOVATION
SKILLS: ACCURATELY USE, MEASURE, MARK OUT, CUT, SHAPE, ASSEMBLE, JOIN AND COMBINE MATERIALS AND COMPONENTS.

SPRING
STRUCTURES FRAME STRUCTURES –
KNOWLEDGE: UNDERSTAND HOW TO STRENGTHEN, STIFFEN AND REINFORCE 3D FRAMEWORKS. USE TRIANGLES FOR RIGIDITY.
CONCEPT: USER, FUNCTIONALITY AND AUTHENTICITY
SKILLS: ACCURATELY USE, MEASURE, MARK OUT, CUT, SHAPE, ASSEMBLE, JOIN AND COMBINE MATERIALS AND COMPONENTS

AUTUMN
FOOD- CELEBRATING CULTURE AND SEASONALITY
KNOWLEDGE: KNOW HOW TO USE APPROPRIATE EQUIPMENT AND UTENSILS TO PREPARE AND COMBINE FOOD. UNDERSTAND ABOUT SEASONALITY IN RELATION TO FOOD PRODUCTS AND THE SOURCE OF DIFFERENT FOOD PRODUCTS
CONCEPT: USER , DESIGN DECISIONS AND INNOVATION
SKILLS: FOLLOW HYGIENE PROCEDURES. PREPARE AND COOK A SAVOURY DISH, USING A HEAT SOURCE. USE A RANGE OF TECHNIQUES SUCH AS PEELING, CHOPPING, SLICING, GRATING,

Year 4

SUMMER
ELECTRICAL SYSTEMS SIMPLE CIRCUITS AND SWITCHES
KNOWLEDGE: UNDERSTAND AND USE ELECTRICAL SYSTEMS, SUCH AS SERIES CIRCUITS INCORPORATING SWITCHES, BULBS AND BUZZERS. APPLY UNDERSTANDING OF COMPUTING TO PROGRAM AND CONTROL
THEIR PRODUCTS. CONCEPT: FUNCTIONALITY, PURPOSE AND , USER SKILLS: USE, MEASURE, MARK OUT, CUT, SHAPE, ASSEMBLE, JOIN AND COMBINE MATERIALS AND COMPONENTS WITH SOME ACCURACY..

SPRING
TEXTILES- 2D SHAPES TO 3D PRODUCT
KNOWLEDGE: KNOW HOW TO STRENGTHEN, STIFFEN AND REINFORCE EXISTING FABRICS. UNDERSTAND HOW TO SECURELY JOIN TWO PIECES OF FABRIC TOGETHER. UNDERSTAND THE NEED FOR PATTERNS AND SEAM ALLOWANCES.
CONCEPT: USER, PURPOSE AND INNOVATION
SKILLS: USE, MEASURE, MARK OUT, CUT, SHAPE, ASSEMBLE, JOIN AND COMBINE MATERIALS AND COMPONENTS WITH SOME ACCURACY. APPLY A RANGE OF FINISHING TECHNIQUES WITH SOME ACCURACY.

AUTUMN
FOOD- HEALTHY AND VARIED DIET
KNOWLEDGE:• USE CORRECT TOOLS TO PREPARE AND COMBINE FOOD.• UNDERSTAND FRESH VS PROCESSED INGREDIENTS AND WHETHER THEY ARE GROWN, REARED OR CAUGHT.
CONCEPTS:• DESIGN DECISIONS, PURPOSE, USER.
SKILLS:• FOLLOW HYGIENE RULES.• COOK A SAVOURY DISH USING HEAT.• TECHNIQUES: PEELING, CHOPPING, SLICING, GRATING, MIXING, SPREADING, KNEADING, BAKING.

Year 3

SUMMER
FOOD- HEALTHY AND VARIED DIET
KNOWLEDGE:• USE APPROPRIATE TOOLS TO PREPARE AND COMBINE FOOD.• KNOW FRESH VS PROCESSED INGREDIENTS AND WHETHER THEY ARE GROWN, REARED OR CAUGHT.
CONCEPTS:• DESIGN DECISIONS, PURPOSE AND USER.
SKILLS:• FOLLOW HYGIENE RULES.• COOK A SAVOURY DISH USING HEAT.• TECHNIQUES: PEELING, CHOPPING, SLICING, GRATING, MIXING, SPREADING, KNEADING, BAKING.

SPRING
STRUCTURES- SHELL STRUCTURES
KNOWLEDGE: USE KNOWLEDGE OF HOW TO CONSTRUCT STRONG, RIGID SHELL STRUCTURES. DEVELOP AND USE KNOWLEDGE OF NETS OF CUBES AND CUBOIDS AND MORE COMPLEX 3D SHAPES.
CONCEPT: DESIGN DECISIONS, FUNCTIONALITY AND AUTHENTICITY
SKILLS: USE, MEASURE, MARK OUT, CUT, SHAPE, ASSEMBLE, JOIN AND COMBINE MATERIALS AND COMPONENTS WITH SOME ACCURACY.

AUTUMN
MECHANICAL SYSTEMS-LEVERS AND LINKAGES
KNOWLEDGE: UNDERSTAND AND USE LEVER AND LINKAGE MECHANISMS. DISTINGUISH BETWEEN FIXED AND LOOSE PIVOTS.
CONCEPT: USER, FUNCTIONALITY AND AUTHENTICITY
SKILLS: USE, MEASURE, MARK OUT, CUT, SHAPE, ASSEMBLE, JOIN AND COMBINE MATERIALS AND COMPONENTS WITH SOME ACCURACY. APPLY A RANGE OF FINISHING TECHNIQUES WITH SOME ACCURACY.

Year 2

SUMMER
TEXTILES- TEMPLATES AND JOINING TECHNIQUES
KNOWLEDGE: UNDERSTAND HOW PRODUCTS ARE MADE USING A TEMPLATE TO CREATE TWO IDENTICAL PIECES. UNDERSTAND HOW TO JOIN TWO PIECES OF FABRIC USING DIFFERENT TECHNIQUES.
CONCEPT: FUNCTIONALITY, USER AND INNOVATION
SKILLS: USE, MEASURE, MARK OUT, CUT, ASSEMBLE, JOIN AND COMBINE FELT. USE FINISHING TECHNIQUES

SPRING
FOOD- PREPARING FRUIT AND VEGETABLES
KNOWLEDGE: UNDERSTAND WHERE A RANGE OF FRUIT AND VEGETABLES COME FROM. UNDERSTAND AND USE BASIC PRINCIPLES OF A HEALTHY AND VARIED DIET TO PREPARE DISHES.
CONCEPT: DESIGN DECISIONS AND PURPOSE
SKILLS: FOLLOW GOOD HYGIENE PROCEDURES. USE TECHNIQUES SUCH AS CUTTING, PEELING, CHOPPING AND GRATING SAFELY.

AUTUMN
MECHANISMS WHEELS AND AXLES
KNOWLEDGE: UNDERSTAND THE DIFFERENCE BETWEEN FIXED AND FREELY MOVING AXLES. USE WHEELS, AXLES AND AXLE HOLDERS TO CREATE A MOVING PRODUCT.
CONCEPT: PURPOSE AND FUNCTIONALITY
SKILLS: USE, MEASURE, MARK OUT, CUT, SHAPE, ASSEMBLE, JOIN AND COMBINE MATERIALS AND COMPONENTS.

Year 1

SUMMER:
MECHANISMS- SLIDERS AND LEVERS
KNOWLEDGE: UNDERSTAND THAT DIFFERENT MECHANISMS PRODUCE DIFFERENT TYPES OF MOVEMENT.
CONCEPT: PURPOSE, FUNCTIONALITY AND AUTHENTICITY
SKILLS: USE, MEASURE, MARK OUT, CUT, SHAPE, ASSEMBLE, JOIN AND COMBINE MATERIALS AND COMPONENTS.

SPRING
STRUCTURES- FREESTANDING STRUCTURES
KNOWLEDGE: KNOW HOW TO MAKE FREESTANDING STRUCTURES STRONGER, RIGID AND MORE STABLE.
CONCEPT: DESIGN DECISIONS, FUNCTIONALITY AND AUTHENTICITY.
SKILLS: USE, MEASURE, MARK OUT, CUT, ASSEMBLE, JOIN AND COMBINE MATERIALS AND COMPONENTS. USE FINISHING TECHNIQUES.

AUTUMN
FOOD- PREPARING FRUIT AND VEGETABLES
KNOWLEDGE: UNDERSTAND WHERE A RANGE OF FRUIT AND VEGETABLES COME FROM. UNDERSTAND AND USE BASIC PRINCIPLES OF A HEALTHY AND VARIED DIET TO PREPARE DISHES.
CONCEPT: DESIGN DECISIONS AND PURPOSE
SKILLS: FOLLOW GOOD HYGIENE PROCEDURES. USE TECHNIQUES SUCH AS CUTTING, PEELING, CHOPPING AND GRATING SAFELY.