

ATOMIC: FLOW BLOCKS



START BLOCK



TRIGGER ON TRUE **CONDITION**



TRIGGER ON **FLAG NUMBER**



CALL **FLAG NUMBER**



WAIT FOR **TIME** (IN SECONDS)



WAIT FOR TRUE **CONDITION**



LOOP FOR **NUMBER COUNT**



LOOP WHILE **CONDITION** IS TRUE



LOOP FOREVER



IF **CONDITION** TRUE EXECUTE TOP SEQUENCE ELSE EXECUTE BOTTOM SEQUENCE.

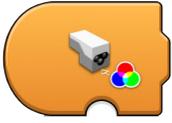


STOP ALL OTHER STRIPS



STOP ALL

ATOMIC: SENSOR BLOCKS



TRIGGER ON **COLOR** EQUAL TO



WAIT FOR **COLOR** EQUAL TO



REPORT CURRENT **COLOR** SEEN BY SENSOR



TRIGGER ON **DISTANCE** LESS THAN



WAIT FOR **DISTANCE** LESS THAN



REPORT CURRENT **DISTANCE** FROM SENSOR



REPORT CURRENT **AMBIENT LIGHT LEVEL**



TRIGGER ON **SOUND LEVEL** GREATER THAN



WAIT FOR **SOUND LEVEL** GREATER THAN



REPORT CURRENT **SOUND LEVEL**



TRIGGER ON **HUB ORIENTATION** EQUAL TO



WAIT FOR **HUB ORIENTATION** EQUAL TO



REPORT CURRENT **HUB ORIENTATION**

ATOMIC: SENSOR BLOCKS



REPORT CURRENT HUB ANGLE IN THE **X** DIMENSION (-90..90)



REPORT CURRENT HUB ANGLE IN THE **Y** DIMENSION (-90..90)



REPORT CURRENT EXTERNAL MOTOR **SPEED**



REPORT CURRENT EXTERNAL MOTOR **POSITION**



RESET EXTERNAL MOTOR POSITION TO **NUMBER**



REPORT CURRENT HUB MOTOR **SPEED**



REPORT CURRENT HUB MOTOR **POSITION**



RESET HUBS MOTORS POSITION TO **NUMBER**



REPORT CURRENT MOTOR A **SPEED**



REPORT CURRENT MOTOR A **POSITION**



RESET MOTOR A POSITION TO **NUMBER**



REPORT CURRENT MOTOR B **SPEED**



REPORT CURRENT MOTOR A **POSITION**



RESET MOTOR B POSITION TO **NUMBER**

ATOMIC: MOTOR BLOCKS



RUN EXTERNAL MOTOR WITH **SPEED** (-100..100) FOR **TIME** (IN SECONDS)



RUN EXTERNAL MOTOR WITH **SPEED** (-100..100) FOR **DISTANCE** (IN DEGREES)



START EXTERNAL MOTOR WITH **SPEED** (-100..100)



STOP EXTERNAL MOTOR



MOVE HUB WITH MOTOR A **SPEED** (-100..100) AND MOTOR B **SPEED** (-100..100) FOR **TIME** (IN SECONDS)



MOVE HUB WITH MOTOR A **SPEED** (-100..100) AND MOTOR B **SPEED** (-100..100) FOR **DISTANCE** (IN DEGREES)



MOVE HUB WITH **SPEED** (-100..100) AND **STEERING** (-100..100) FOR **TIME** (IN SECONDS)



MOVE HUB WITH **SPEED** (-100..100) AND **STEERING** (-100..100) FOR **TIME** (IN DEGREES)



START MOVING HUB WITH MOTOR A **SPEED** (-100..100) AND MOTOR B **SPEED** (-100..100)



START MOVING HUB WITH **SPEED** (-100..100) AND **STEERING** (-100..100)



STOP MOVEING HUB

ATOMIC: MOTOR BLOCKS



RUN MOTOR A WITH **SPEED** (-100..100) FOR **TIME** (IN SECONDS)



RUN MOTOR A WITH **SPEED** (-100..100) FOR **DISTANCE** (IN DEGREES)



START MOTOR A WITH **SPEED** (-100..100)



STOP MOTOR A



RUN MOTOR B WITH **SPEED** (-100..100) FOR **TIME** (IN SECONDS)



RUN MOTOR B WITH **SPEED** (-100..100) FOR **DISTANCE** (IN DEGREES)



START MOTOR B WITH **SPEED** (-100..100)



STOP MOTOR B

ATOMIC: SOUND AND LIGHT BLOCKS



SET HUB LIGHT TO **COLOR**



SET SENSOR LIGHT TO **COLOR**



PLAY **SOUND** FROM SOUND LIBRARY



PLAY **SOUND** FROM SOUND LIBRARY WITH CURRENT FILTERS



SET PITCH **FILTER** (-100..100)



SET DISTORTION **FILTER** (0..100)



SET ECHO **FILTER** (0..100)



CLEAR FILTERS

ATOMIC: MATH BLOCKS



READ **VARIABLE** (ICON)



WRITE TO **VARIABLE** (ICON) WITH **NUMBER**



RANDOMIZE BETWEEN FIRST **NUMBER** AND SECOND **NUMBER**



NUMBER EQUAL TO **NUMBER**



NUMBER LESS THAN **NUMBER**



NUMBER GREATER THAN **NUMBER**



NUMBER NOT EQUAL TO **NUMBER**



NUMBER PLUS **NUMBER**



NUMBER MINUS **NUMBER**



NUMBER MULTIPLY WITH **NUMBER**



NUMBER DIVIDE BY **NUMBER**

GETTING STARTED BLOCKS



START BLOCK



WAIT FOR TIME



TRIGGER ON SENSOR LESS THAN



MOVE 1 GRID SPACE FORWARD



MOVE BACK



MOVE FORWARD HALF A GRID AND TURN 45 DEGREES TO THE LEFT



MOVE FORWARD HALF A GRID AND TURN 45 DEGREES TO THE RIGHT



ROTATE 180 DEGREES TO THE RIGHT



MOVE FAST 360 DEGREES TO THE LEFT



MOVE FAST FORWARD 1 GRID SPACE



MUSIC SOUND



MOVE FAST BACK 1 GRID SPACE



START PROPELLER



GREETING SOUND



ROTATE PROPELLER



HORN SOUND



FART

VERNIE: FLOW BLOCKS



START BLOCK



TRIGGER ON FLAG



CALL FLAG



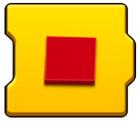
WAIT FOR TIME



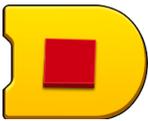
LOOP FOR COUNT



LOOP FOREVER



STOP ALL OTHER STRIPS



STOP ALL

VERNIE: SENSOR BLOCKS



TRIGGER ON HANDSHAKE



WAIT FOR HANDSHAKE



TRIGGER ON DIZZY



TRIGGER ON EXHAUSTED



TRIGGER ON INACTIVITY



TRIGGER ON COLOR



WAIT FOR COLOR



TRIGGER ON DISTANCE



WAIT FOR DISTANCE



TRIGGER ON SOUND LEVEL



WAIT FOR SOUND LEVEL



WAIT FOR BUTTON

VERNIE: MOVEMENT BLOCKS



MOVE **NUMBER** OF GRID SPACE FORWARD



MOVE **NUMBER** OF GRID SPACE BACK



ROTATE **NUMBER** OF DEGREES TO THE LEFT



ROTATE **NUMBER** OF DEGREES TO THE RIGHT



MOVE IN AN ARC TO THE LEFT. VERNIE SHOULD END UP **NUMBER** OF GRID SPACE FORWARD, **NUMBER** GRID SPACE TO THE LEFT AND BE ROTATED 90 DEGREES TO THE LEFT.



MOVE IN AN ARC TO THE RIGHT. VERNIE SHOULD END UP **NUMBER** OF GRID SPACE FORWARD, **NUMBER** GRID SPACE TO THE LEFT AND BE ROTATED 90 DEGREES TO THE RIGHT.



ROTATE SLOWLY **NUMBER** OF DEGREES TO THE LEFT



ROTATE FAST **NUMBER** OF DEGREES TO THE RIGHT.



ROTATE RANDOM AMOUNT OF DEGREES



MOVE **NUMBER** OF GRID SPACE FAST FORWARD



SET HEAD POSITION TO LOOK LEFT WITH **SPEED**



SET HEAD POSITION TO LOOK STRAIGHT WITH **SPEED**



SET HEAD POSITION TO LOOK RIGHT WITH **SPEED**



MOVE HEAD RANDOMLY

VERNIE: SOUND BLOCKS



SMALL TALK PHRASES



EXCITED PHRASES



HAPPY PHRASES



QUESTION PHRASES



BASIC PHRASES



SPECIAL PHRASES



FEELING BAD PHRASES



ANGRY PHRASES



COWBOY PHRASES



COP QUESTION PHRASES



POLICE OFFICER PHRASES



COOL PHRASES



BEATBOXING



CROWD REACTIONS SOUNDS



PLAY MUSIC



PLAY SOUND FROM
SOUND LIBRARY

VERNIE: ACTION BLOCKS



SHOOT



DANCE SLOW



DANCE FAST



DISCO LIGHTS



FART



PUNCH



ANGRY VERNIE (EDITABLE)



EXCITED VERNIE (EDITABLE)



HAPPY VERNIE (EDITABLE)



SAD VERNIE (EDITABLE)



ACTIVATION

VERNIE: INTERACTION BLOCKS



AIMING LEFT/RIGHT UNTIL A LOUD SOUND IS HEARD



DUEL WITH VERNIE TO SEE WHO IS FASTER

User should press the orange button on the tablet as soon as Vernies light turns green.



SHOW VERNIE YOUR IDENTIFICATION

The user just needs to put something in front of the sensor on Vernie's chest



USE THE SLIDER TO MAKE SCRATCHING SOUNDS



TAKE CONTROL OF VERNIE TO RACE THROUGH A TRACK.

Hold down the button to speed up, let go to slow down. Use slider to control steering.



MAKE A GOLF SWING.

Equip Vernie with his golf club in his right hand



USE THE JOYSTICK TO MOVE VERNIE AROUND



MOVE UNTIL WALL

Vernie will move until there is something in front of his sensor.

VERNIE: MATH BLOCKS



COUNTDOWN



RANDOMIZE BETWEEN FIRST **NUMBER** AND SECOND **NUMBER**

FRANKIE: FLOW BLOCKS



START BLOCK



TRIGGER ON FLAG



CALL FLAG



WAIT FOR TIME



LOOP FOR COUNT



LOOP FOREVER



STOP ALL OTHER STRIPS



STOP ALL

FRANKIE: SENSOR BLOCKS



TRIGGER ON MILKBOTTLE COLOR



TRIGGER ON CANDLE COLOR



TRIGGER ON HEAD UP ORIENTATION



TRIGGER ON LYING ON BACK ORIENTATION



TRIGGER ON TAIL UP ORIENTATION



TRIGGER ON PETTING



TRIGGER ON INACTIVITY



TRIGGER ON **COLOR**



WAIT FOR **COLOR**



TRIGGER ON **DISTANCE**



WAIT FOR **DISTANCE**



TRIGGER ON **SOUND LEVEL**



WAIT FOR **SOUND LEVEL**

FRANKIE: MOVEMENT BLOCKS



SET EYES TO LOOK LEFT WITH **SPEED**



SET EYES TO LOOK STRAIGHT DOWN WITH **SPEED**



SET EYES TO LOOK RIGHT WITH **SPEED**



WAG TAIL WITH **SPEED**



STAND UP



SIT DOWN

FRANKIE: SOUND BLOCKS



HARMONICA **TONE**



HARMONICA **RIFFS NUMBER**



FRANKIE SINGING BLUES



FRANKIE SINGING BIRTHDAY SONG



BACKING MUSIC INTRO



BACKING MUSIC



PLAY **SOUND** FROM
SOUND LIBRARY

FRANKIE: ACTION BLOCKS



HAPPY



EXCITED



PURRING



DRINKING



EATING



SLEEPING



SURPRISED



SAD



ANNOYED



ANGRY



FIERCE

FRANKIE: ACTION BLOCKS



INACTIVE



BLOW



FART



BURP



PHARAOH (EDITABLE)



ANGRY (EDITABLE)



PURRING AND HAPPY (EDITABLE)

FRANKIE: INTERACTION BLOCKS



NEED FOR MILKBOTTLE



NEED FOR WHITE FISH



NEED FOR BEING HELD UP



NEED FOR LYING DOWN



HARMONICA RIFF

Riff depends on [color](#) currently seen

FRANKIE: MATH BLOCKS



RANDOMIZE BETWEEN FIRST **NUMBER** AND SECOND **NUMBER**

GUITAR 4000: FLOW BLOCKS



START BLOCK



WAIT FOR TIME



LOOP FOR COUNT



LOOP FOREVER

GUITAR 4000: SENSOR BLOCKS



TRIGGER ON STRUM UP OR DOWN



TRIGGER ON STRUMMING SPEED



TRIGGER ON STRUM UP OR DOWN AND IN THE YELLOW FRET



TRIGGER ON STRUM UP OR DOWN AND IN THE GREEN FRET



TRIGGER ON STRUM UP OR DOWN AND IN THE RED FRET



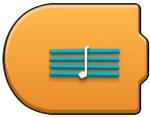
TRIGGER ON STRUM UP OR DOWN AND IN THE BLUE FRET



TRIGGER ON STRUM UP OR DOWN AND IN THE WHITE FRET



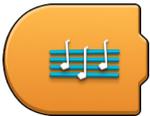
TRIGGER ON GUITAR ORIENTATION UP



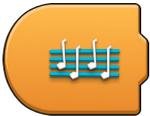
TRIGGER ON 1ST BEAT IN A 4/4 TIME SIGNATURE



TRIGGER ON 2ND AND 4TH BEAT IN A 4/4 TIME SIGNATURE

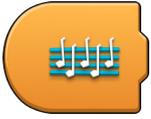


TRIGGER ON 3 TIMES IN A 4/4 TIME SIGNATURE

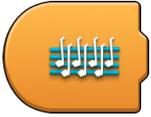


TRIGGER ON EACH BEAT IN A 4/4 TIME SIGNATURE

GUITAR 4000: SENSOR BLOCKS



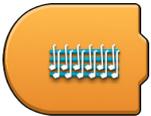
TRIGGER ON 5 TIMES IN A 4/4 TIME SIGNATURE



TRIGGER ON 7 TIMES IN A 4/4 TIME SIGNATURE



TRIGGER ON 9 TIMES IN A 4/4 TIME SIGNATURE



TRIGGER ON 12 TIMES IN A 4/4 TIME SIGNATURE



TRIGGER ON TAP



REPORT THE GUITAR FRET **DISTANCE**



REPORT THE GUITAR ANGLE IN THE **Y** DIMENSION



REPORT THE WHAMMY BAR **POSITION**



REPORT THE WHEEL **POSITION**

GUITAR 4000: SOUND BLOCKS



ACUSTIC GUITAR **CHORDS**



ACUSTIC GUITAR **CHORDS** PLAYED WITH RHYTHM



ACUSTIC GUITAR **CHORDS** PLAYED WITH PICKERING



ACUSTIC GUITAR **CHORDS** PLAYED WITH A GALLOPING RHYTHM



DISTROTED GUITAR **CHORD** STRUMMED UP



DISTROTED GUITAR **CHORD** STRUMMED DOWN



DISTROTED GUITAR **CHORD** PLAYED WITH RHYTHM



ELECTRIC GUITAR **CHORDS**



ELECTRIC GUITAR **CHORDS** PLAYED WITH RHYTHM



ELECTRIC GUITAR **CHORDS** PLAYED WITH PICKERING



BASS GUITAR **TONE**



BASS GUITAR **CHORDS** PLAYED WITH PICKERING



SOLO **RIFF NUMBER**

GUITAR 4000: SOUND BLOCKS



VIOLIN SOUND AT **SPEED**



BASS DRUM SOUND **NUMBER**



SNARE DRUM/TOM TOM DRUM SOUND **NUMBER**



CYMBAL SOUND **NUMBER**



PERCUSSION SOUND **NUMBER**



FART **CHORDS**



ANIMAL SOUND **NUMBER**



PLAY **MUSIC**



CROWD REACTIONS **SOUNDS**



SET PITCH **FILTER**



SET DISTORTION **FILTER**



SET ECHO **FILTER**



PLAY **SOUND** FROM
SOUND LIBRARY

GUITAR 4000: ACTION BLOCKS



ACUSTIC GUITAR

Chord depends on **distance** on guitar fret



ACUSTIC GUITAR PLAYED WITH RHYTHM

Chord depends on **distance** on guitar fret



ACUSTIC GUITAR PLAYED WITH PICKERING

Chord depends on **distance** on guitar fret



ACUSTIC GUITAR PLAYED WITH GALLOPING RHYTHM

Chord depends on **distance** on guitar fret



DISTROTION GUITAR

Chord depends on **distance** on guitar fret



DISTROTION GUITAR PLAYED WITH RHYTHM

Chord depends on **distance** on guitar fret



ELECTRIC GUITAR

Chord depends on **distance** on guitar fret



ELECTRIC GUITAR PLAYED WITH RHYTHM

Chord depends on **distance** on guitar fret



ELECTRIC GUITAR PLAYED WITH PICKERING

Chord depends on **distance** on guitar fret



BASS GUITAR

Tone depends on **distance** on guitar fret



BASS GUITAR PLAYED WITH PICKERING

Tone depends on **distance** on guitar fret



SOLO GUITAR

Riff depends on **distance** on guitar fret



VIOLIN

Sound depends on **speed** of strumming



SCRATCHING



FART

Chord depends on **distance** on guitar fret



DISCO LIGHTS

MTR4: FLOW BLOCKS



START BLOCK



TRIGGER ON FLAG



CALL FLAG



WAIT FOR TIME



LOOP FOR COUNT



LOOP FOREVER

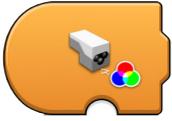


STOP ALL OTHER STRIPS



STOP ALL

MTR4: SENSOR BLOCKS



TRIGGER ON COLOR



WAIT FOR COLOR



TRIGGER ON DISTANCE



WAIT FOR DISTANCE



TRIGGER ON SOUND LEVEL



WAIT FOR SOUND LEVEL



WAIT FOR BUTTON

MTR4: MOVEMENT BLOCKS



MOVE **NUMBER** OF GRID SPACE FORWARD



MOVE **NUMBER** OF GRID SPACE BACK



ROTATE **NUMBER** OF DEGREES TO THE LEFT



ROTATE **NUMBER** OF DEGREES TO THE RIGHT



MOVE IN AN ARC TO THE LEFT. VERNIE SHOULD END UP **NUMBER** OF GRID SPACE FORWARD, **NUMBER** GRID SPACE TO THE LEFT AND BE ROTATED 90 DEGREES TO THE LEFT.



MOVE IN AN ARC TO THE RIGHT. VERNIE SHOULD END UP **NUMBER** OF GRID SPACE FORWARD, **NUMBER** GRID SPACE TO THE LEFT AND BE ROTATED 90 DEGREES TO THE RIGHT.



ROTATE SLOWLY **NUMBER** OF DEGREES TO THE LEFT



ROTATE FAST **NUMBER** OF DEGREES TO THE RIGHT.



MOVE **NUMBER** OF GRID SPACE FAST FORWARD

MTR4: SOUND BLOCKS



CROWD REACTIONS **SOUNDS**



PLAY **MUSIC**



PLAY **SOUND** FROM
SOUND LIBRARY

MTR4: ACTION BLOCKS



SHOOT



DANCE SLOW



DANCE FAST



DISCO LIGHTS



FART



PUNCH



ANGRY VERNIE



EXCITED VERNIE



HAPPY VERNIE



SAD VERNIE



ACTIVATION



DQW



QWDQW



MTR4: INTERACTION BLOCKS



AIMING LEFT/RIGHT UNTIL A LOUD SOUND IS HEARD



TAKE CONTROL OF VERNIE TO RACE THROUGH A TRACK.
Hold down the button to speed up, let go to slow down. Use slider to control steering.



USE THE JOYSTICK TO MOVE VERNIE AROUND



USE THE SLIDER TO MAKE SCRATCHING SOUNDS



MOVE UNTIL WALL
Vernie will move until there is something in front of his sensor.



MTR4: MATH BLOCKS



RANDOMIZE BETWEEN FIRST **NUMBER** AND SECOND **NUMBER**

AUTO BUILDER: FLOW BLOCKS



START BLOCK



TRIGGER ON FLAG



CALL FLAG



WAIT FOR TIME



LOOP FOR COUNT



LOOP FOREVER

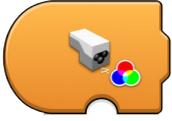


STOP ALL OTHER STRIPS



STOP ALL

AUTO BUILDER: SENSOR BLOCKS



TRIGGER ON COLOR



WAIT FOR COLOR



TRIGGER ON DISTANCE



WAIT FOR DISTANCE



TRIGGER ON SOUND LEVEL



WAIT FOR SOUND LEVEL

AUTO BUILDER: MOVEMENT BLOCKS



MOVE CONVEY BELT WITH **SPEED** FOR **TIME** (IN SECONDS)



MOVE CONVEY BELT WITH **SPEED** TO **POSITION**



PICK UP BRICK



PLACE BRICK



MOVE GRAPPER UP WITH **SPEED**



MOVE GRAPPER DOWN WITH **SPEED**



MOVE GRAPPER WITH **SPEED** TO **POSITION**



ROTATE SPINNER WITH **SPEED** FOR **TIME** (IN SECONDS)

AUTO BUILDER: SOUND BLOCKS



CROWD REACTIONS **SOUNDS**



PLAY **MUSIC**



PLAY **SOUND** FROM
SOUND LIBRARY

AUTO BUILDER: ACTION BLOCKS



PICK UP BLACK 2X4 BRICK



PICK UP GREEN 2X2 BRICK



PICK UP BLACK 4X4 WITH ANGLE PLATE



PICK UP GRAY 2X2 PLATE



PICK UP WHITE 2X4 BRICK WITH PRINT



ASSEMBLE A RANDOM MINI VERNIE



DISPLAY MINI VERNIE



PUSH OUT MINI VERNIE

AUTO BUILDER: INTERACTION



AIMING LEFT/RIGHT UNTIL A LOUD SOUND IS HEARD



DUEL WITH VERNIE TO SEE WHO IS FASTER

User should press the orange button on the tablet as soon as Vernies light turns green.

AUTO BUILDER: MATH BLOCKS



COUNTDOWN



RANDOMIZE BETWEEN FIRST **NUMBER** AND SECOND **NUMBER**

EXAMPLE OF IF ELSE

EXAMPLE OF FLAGS

EXAMPLE OF VARIABLE

EXAMPLE OF PITCH FILTERS

EXAMPLE OF CALIBRATING AND USING TO POSITION

EXAMPLE OF CREATING A MODEL BLOCK

EXAMPLE OF CREATING A REPORTER

EXAMPLE OF CREATING A TRIGGER