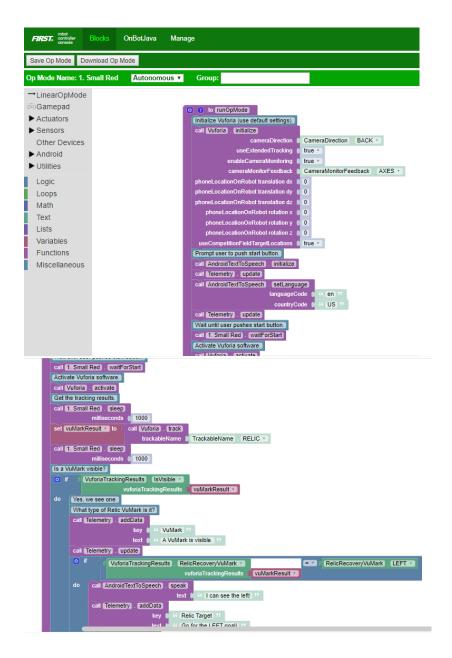
We have programs for 4 autonomous starting positions: small red, big red, small blue, big blue, and a driver-controlled program called Tele-Op. The Blocks programming does not have a print function, so we copied and pasted our code into a Word document the best we could.

1. Small Red



```
text ( " Go for the LEFT goal! "
cal Telemetry . update
Deactivate before exting
cal Vuforia . deactivate
set Slider . Direction . to . Direction . FORWARD .
set Jevel Color . . Position . to . 0.36
set Gripper . Position . to . 0.45
set Slider . . Power . to . 1
cal 1. Small Red . sleep
miliseconds . 500
     call color sensor * . (enableLed enable false * )
enable | false *

call (1.Small Red | . sleep)
millseconds | 500

call (color sensor * . enableLed)
enable | true *

set Slider * . Power * to | 0

set Uewel Color * . Position * to | 0.81

call (1.Small Red | . sleep)
millseconds | 5000

set Color * to | call Color . rgbToColor
                                                                                                                                                             red color sensor v . Red v
green color sensor v . Green v
blue color sensor v . Blue v
                                                                                                                                                                                                     ≥ ▼ 0.5 and ▼
           Color . Saturation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       or Color . Hue
                                                                                                                                                                                                                                                                                                                                     Color . Hue
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              < v 37.5
                                                                                                                                                     red color sensor · . Red · green · Color sensor · . Green · Color sensor · . Blue · .
                            Color Saturation Color Color Color
                                                                                                                                                                                                                                                                                                                                     Color . Hue v
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 > v 260 or v Color . Hue v
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      < v | 37.5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       lor Color
                                                                                                                                                                                                                                                                                                                                                                                      color Color
                Red

call AndroidTextToSpeech . speak

text to the first 
do Red
                   set left_drive * Direction * to Direction REVERSE *
set right_drive * Direction * to Direction FORWARD *
set left_drive * Power * to 0
set right_drive * Power * to 0
cal 1. Small Red . sleep
millseconds 975
knock off blue forward
set left_drive * Power * to 0 25
                            knock off blue forward
set [eft_drive*. Power* to $\ -0.25
set [right_drive*. Power* to $\ -0.25
call 1. Small Red . sleep
milliseconds $\ 250
set [Power*
right_drive* to $\ 0
left_drive* to $\ 0
left_drive* to $\ 0
set [Left_drive* to $\ 0
set [Left_drive*] Position* to $\ 0.36
call 1. Small Red . sleep
milliseconds $\ 1500
go straight
                            go straight
set Power * to | =0.2
left_drive * to | =0.2
call 1. Small Red : sleep
millseconds | 1500
                                  go straight
```

```
turn and deposit glyphs

set left_drive * . Direction * to Direction FORWARD *

set left_drive * . Direction * to Direction REVERSE *

set left_drive * . Power * to 0 0

call 1. Small Red sleep

miliseconds 0 500

set Power * to 0 0.4

left_drive * to 
                                                                  final forward to deposit glyphs
                                                              final forward to deposit glyphs
set | Power |
fight drive | to | 0.2
left_drive | to | 0.2
call | 1. Small Red | sleep |
milliseconds | 1200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Color . Hue v
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ≥ ▼ 0.5 and ▼
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2 v 180 and v Color . Hue v
                                                milliseconds 1200
                                                                                                                                 Color . Saturation v
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ≥ v 0.5 and v
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Color Hue Color Co
do Blue
cnii AndroidTextToSpeech - speak
text | text | text | if can see Blue! ''
set Jewel Cotor * . Position * to * 0.81
set left_drive * . Direction * to * Direction * FORWARD * set left_drive * . Direction * to * Direction * REVERSE * set left_drive * . Power * to * 0
set right_drive * . Power * to * 0
call *1. Small Red . sleep
miliseconds * 1000
go back, knock off blue
set left_drive * . Power * to * 0.2
                                                                  go back knock off bitse
set [set_drive **]. Power ** to $\bigs_{-0.2}$
set right_drive **]. Power ** to $\bigs_{-0.2}$
call $1.$ small Red . sleep
miliseconds $\bigs_{-0.2}$
set [set_drive **]. Power ** to $\bigs_{-0.2}$
set [set_drive **]. Power ** to $\bigs_{-0.2}$
call $1.$ small Red . sleep
miliseconds $\bigs_{-0.2}$
miliseconds $\bigs_{-0.2}$
miliseconds $\bigs_{-0.2}$
for $\bigs_{-0.2}$
miliseconds $\bigs_{-0.2}$
for $\bi
                                                                  call 1. Small Red . sleep
milliseconds 600

right_drive to 0.3

left_drive to 0.3

call 1. Small Red . sleep
milliseconds 1760

set Power 1

right_drive to 0

left_drive to 0

call 1. Small Red . sleep
milliseconds 1000

(turn)
                                                                  citum)
set Power
right drive to 0.8
left_drive to 0.0.4
call 1.Small Red . sleep
millseconds 0.735
set Power
right_drive to 0
left_drive to 0
left_drive to 0
left_drive sleep.
                                                                             call 1. Small Red . sleep
milliseconds 1000
final forward to deposit glyphs
                                                                          set right_drive . Power to 0.2
set left_drive . Power to 0.2
call 1. Small Red . sleep
millseconds . 1600
              else No Jewel
```

```
No Jewel

call AndroidTextToSpeech speak

text to " I don't see a jewel " 

set Jewel Color " Position " to " 0.36

call 1. Small Red . sleep

milliseconds | 1500

set left_drive " Direction " to " Direction REVERSE " 

set left_drive " Direction " to " Direction FORWARD " 

set left_drive " Power " to " 0

call 1. Small Red . sleep

milliseconds | 975

knock off blue forward | set left_drive " Power " to " 0.3
                                                                     knock off blue forward
set [eft_drive*] Power* to $\ -0.3
call 11.Small Red . sleep
milliseconds $\ 475
set [Power*]
injult_drive* to $\ 0
left_drive* to $\ 0
call 11.Small Red . sleep
milliseconds $\ 1000
go straight]
                                                                                go straight
                                                                           set Power v
right_drive v to 0 -0.2
left_drive v to 0 -0.2
                                                        set right_drive . Direction to Direction REVERSE . set left_drive . Power to 0 0 set right_drive . Power to 0 0 call 1. Small Red . sleep
                                                   call 1. Small Red sleep
miliseconds 5 500
set [Power * ]
injth_drive * to 1 0.4
left_drive * to 1 0.8
call 1. Small Red sleep
miliseconds 6 600
set [Power * ]
injth_drive * to 1 0
left_drive * to 1 0
left_drive * to 1 0
call 1. Small Red sleep
miliseconds 5 300
final forward to deposit glyphs
set [left_drive * ] Direction * To 1 Direction FORWARD * set [left_drive * ] Direction * To 2 Direction REVERSE * set [Power * ]
                                                     set [right_drive * Direction * to
set [Power * Iright_drive * to 0 0
call 1. Small Red . sleep
milliseconds $ 500
set [Power * Iright_drive * to 0 0.2
left_drive * to 0 0.2
                key ( " Relic Target " text ( " Go for the CENTER goall " call Telemetry | update
Cell telementy expenses

Cell telementy expenses

call Vuforia deactivate

set slider Direction to Direction FORWARD

set slider Power to 0 1

call 1. Small Red sleep

milliseconds 500

call color sensor enable.ed

call 1. Small Red sleep

milliseconds 500

call color sensor 500

call color sensor 500

set slider 500

set slider 600 Power 500

set slider 600 Power 600

set slider 600 Power 600

set slider 700 Power 700

set slider 700 Power 700

set slider 700 Color sensor 6000

set slider 700 Color 60000

set slider 700 Color 6000

set slider 700 Color 6
                                                                                                                                                                                                                                                                                                          red ( color sensor · . Red · )
green ( color sensor · . Green · )
blue ( color sensor · . Blue · )
```

```
260 or Color . Hue color . Color . Color
                           ≥ ▼ (0.5) and ▼
                                          Color . Hue v
                                                                                         < ▼ 37.5
   set Power | right_drive | to | 0.19 | left_drive | to | 0.19 | call | 1. Small Red | . sleep | miliseconds | 1400
       milliseconds (1400
     Color . Saturation Color Color
                          ≥ ▼ (0.5) and ▼
                                                           and Color . Hue
                                          Color Hue
                                                                                         ≤ ▼ ( 270
```

```
right_drive to 0

left_drive to 0

call 1.Small Red sleep
milliseconds to 1000

final forward to deposit glyphs
set [right_drive to Direction to Direction REVERSE tright_drive to Direction to Direction REVERSE tright_drive to Direction to Direction REVERSE tright_drive to Direction to 0.19
set [right_drive to Power to 0.19
set [right_drive to Power to 0.19
set [right_drive to Direction t
                                                         No color

call AndroidTextToSpeech | speak|
text | set | level Color | Position | to | 0.36

call 1. Small Red | sleep | milliseconds | 1500

set | left_drive | Direction | to | Direction | REVERSE | set | left_drive | Direction | to | Direction | FORWARD | set | left_drive | Power | to | 0 | call 1. Small Red | sleep | milliseconds | 975 | knock off blue forward | 200

set | Power | 200

s
                              else No color
                                                                                     set Power 1
right_drive 1 to 0
left_drive 1 to 0
call (1. Small Red ) . sleep
milliseconds 1 1000
                                                                                            go straight
                                                                                     go straight
set Power 
left_drive | to | -0.25
left_drive | to | -0.25
left_drive | to | -0.25
call | 1. Small Red | . sleep
milisoconds | 1350
set | Power |
left_drive | to | 0
                                                                                     second turn
                                                                                            right_drive v to ( 0.4
                                                                                  miliseconds 700

set Power 10 0

left_drive 10 0

cal 1. Small Red . sleep
miliseconds 1000

set Power 1

left_drive 10 0.19

left_drive 10 0.19

cal 1. Small Red . sleep
miliseconds 0.1400
                                                                                  | VuforiaTrackingResults | RelicRecoveryVuMark | |
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              RelicRecoveryVuMark RIGHT
do call AndroidTextToSpeech . speak text 4 1 can see the right!
                                               call Telemetry . addData
                                                                                                                                                                                                                                                                            Relic Target
                                                                                                                                                                                         key text
                                                                                                                                                                                                                                                                  Go for the RIGHT goal!
                                          Call Telemetry . update Deactivate before exiting.
                                        cal Vuforia deactivate
set stider * Direction to Direction FORWARD *
set Jewel Color * Position to 0.36
set Gripper * Position to 0.45
set stider * Power to 0.1
```

```
milliseconds 500 call color sensor . enableLed
                                                    enable ( false *
 call 1. Small Red . sleep
milliseconds 500
  call color sensor v . enableLed
 enable true v
set Slider v . Power v to 0 0
set Jewel Color v . Position v to 0 0.81
set Jewel Color * Tournel 1. Small Red . | Seep | milliseconds | 5000 | set Color * to ( call Color . rgbToColor | red (
                                                                             red color sensor · . Red · green color sensor · . Green · blue color sensor · . Blue ·
O if Color . Saturation v 2 0.5 and v color Color v
                                                                                                                                                                     Color | Color v
                                                                                                                                                                                                                                > 260 or Color Hue
                                                                                                                                                                                                                                                                                                                                                         < v 37.5
  do Red
            call AndroidTextToSpeech speak text | " I can see Redl 32 set Jewel Color * Position * to * 0.81 set left_drive * . Direction * to * Direction REVERSE * set light_drive * . Direction * to * Direction FORWARD * set left_drive * . Power * to * 0 set light_drive * . Power * to * 0.0
             set left_drive ** Direction * to ** Direction ** FORWARD **

set left_drive ** Power ** to ** 0 
call 1.Small Red ** sleep 
milliseconds ** 975

knock off blue forward 
set left_drive ** Power ** to ** -0.25

set left_drive ** Power ** to ** -0.25

call 1.Small Red ** sleep 
milliseconds ** 300

set Power ** tright_drive ** to ** 0

call 1.Small Red ** sleep 
milliseconds ** 500

milliseconds ** 500
               set Jewel Color 1 Position 1 to 0.36 call 1. Small Red . sleep milliseconds 0 1500
                go straight
                go straight
set Power v
right_drive v to -0.25
left_drive v to -0.25
call 1. Small Red sleep
                milliseconds 1150
            set Power |

left_drive | to | 0.8 |
call | 1. Small Red | . sleep |
millseconds | 900 |
set Power |
right_drive | to | 0 |
left_drive | to | 0 |
call | 1. Small Red | . sleep |
millseconds | 1000 |
final forward to depose glyphs |
set left_drive | Direction | to |
                set left_drive * . Direction * to Direction FORWARD * set right_drive * . Direction * to Direction REVERSE *
            set fight drive
set Power II
right drive II to II 0
left drive II to II 0
call 1. Small Red II sleep
millseconds II 500
              call 1.Small Red . sleep milliseconds . 500
set Power . right_crive . to . 0.19
left_crive . to . 0.19
call 1.Small Red . sleep milliseconds . 1700
Color . Saturation .
                                                                                                           ≥ ▼ 0.5 and ▼ Color . Hue ▼
                                                                                                                                                                                                                                      2 v 180 and v Color . Hue v
                                                                                                                                                                                                                                                                                                                                                              ≤ ▼ 270
                                                                            lor Color
                                                                                                                                                                                                 color Color
  do Blue call AndroidTextToSpeech . speak
```

```
Blue
call [AndroidTextToSpeech | speak
text | set | se
                             go back, knock off blue
set left_drive Power to 0-0.2
set right_drive Power to 0-0.2
call 1.Small Red_sleep
milliseconds 250
set left_drive Power to 0
set right_drive Power to 0
set right_drive Power to 0
call 1.Small Red_sleep
milliseconds 500
set Jetvel Color Position to 0.36
call 1.Small Red_sleep
milliseconds 1-0.06
go fonward
                                   go forward
                                     go forward
set Power *
Ingn_erive * to * 0.3
call 1. Small Red * sleep
miliseconds * 1670
set Power *
inght_erive * to * 0
call 1. Small Red * sleep
miliseconds * 1000
(turn)
                                             miliseconds | 1000 |
(turn)
set Power * | 0 0.8 |
left_drive * to | 0.4 |
call (1. Small Red | sleep |
miliseconds | 990 |
set Power * | to | 0 |
left_drive * to | 0 |
call (1. Small Red | sleep |
miliseconds | 1000 |
final forward to deposit glyphs |
set right_drive * | Power * to | 0 |
                                                      set fright_drive . Power . to . 0.19
set left_drive . Power . to . 0.19
call 1. Small Red . sleep
milliseconds . 1900
        else No Jewel
                                           set right_drive * . Power * to * 0.19
set left_drive * . Power * to * 0.19
call 1. Small Red . sleep
milliseconds * 1900
else No Jewel
                                        No Jewel
call AndroidTextToSpeech speak
text t " I don't see a jewel "
set Jewel Color " Position to 0.36
call 1. Small Red . sleep
milliseconds 1500
set [eff_drive " Direction to Direction REVERSE "
set [eff_drive " Direction to Direction FORWARD "
set [eff_drive " Power to 0
call 1. Small Red . sleep
milliseconds 975
knock off bic forward
set [eff_drive " Power to 0.0
                                                knock off blue forward
set [eff_drive*]. Power* to $\bigs_02$
set [right_drive*]. Power* to $\bigs_02$
call 1. Small Red . sleep
milliseconds $\bigs_030$
                                             millisecone
set Power v
right_drive v to 0
left_drive v to 0
                                                   call (1. Small Red) . sleep
```

```
ngn_onve to U

left_drive to 0

call 1. Small Red . sleep

millseconds 0 500
                        go straight
set Power
right_drive to -0.25
call 1. Small Red . sleep
miliseconds 1200
set Power
right_drive to 0
left_drive to 0
call 1. Small Red . sleep
miliseconds 1000
turn and deposit glyphs
                           turn and deposit glyphs
                         turn and deposit glyphs
set Power
ight_drive to 0.0.4
left_drive to 0.0.3
call 1. Small Red . Sleep
millseconds 840
set Power
ight_drive to 0
left_drive to 0
call 1. Small Red . Sleep
millseconds 1000
final forward to deposit glyphs
                           set Power *

fright drive * to 0.19

[left_drive * to 0.19

cal 1. Small Red . sleep

milliseconds ( 1800
  else call (Telemetry) . addData
                                                          key text
                                                                                Relic Target
                                                                              WuMark of UNKNOWN type...
          call Telemetry . update
No, we don't see one.
  call (Telemetry) . (addData)
                                                                  VuMark >>
                                                               66 No VuMarks are visible.
cal Telemetry . Update
Deactivate before exiting
cal Vuforia . deactivate
set Slider * . Direction * to * Direction FORWARD *
set Jewel Color * . Position * to * 0.36
set Gripper * . Position * to * 0.45
set Slider * . Power * to * 1
cal 1. Small Red . sleep
milliseconds | 5500
cal Color sensor * . enable ed
  call (1 Small Re.
                               Color Saturation
                                                                                                          2 0.5 and Color . Hue
                                                                                                                                                                                                                                   > 260 or Color . Hue v
                                                                   color Color v
    do call AndroidTextToSpeech . speak
                                                                                                  (I see nothing)
              miliseconds 1200
              Red
call AndroidTextToSpeech speak
text to " I see Red "
set Jewel Color " Position " to " 0.81
set left_drive " . Direction " to " Direction REVERSE "
set fight_drive " . Direction " to " Direction FORWARD "
set Power "
right_drive " to " 0
call 1. Small Red . sleep.
                call 1. Small Red . sleep
milliseconds 500
knock off blue forward
               knock off blue forward
set left_drive " Power to 0 -0.25
cal 1. Small Red . sleep
miliseconds 0 250
set left_drive " Power to 0 0
set left_drive " Power to 0 0
set left_drive " Power to 0 0
cal 1. Small Red . sleep
miliseconds 0 500
```

```
right_drive to 0 -0.3

left_drive to 0 -0.3

call 1. Small Red | Sleep

millseconds 0 1100
                                               milliseconds | 1100
set Power * | 1100
set Power * | 10 | 0
call 1. Small Red | Sleep
milliseconds | 500
turn to deposit glyphs
set left_drive * | Direction * to | Direction | FORWARD * set light_drive * | Direction * to | Direction | REVERSE * set Power * |
                                 set right_drive ** Direction ** to ** Direction ** to ** Direction *
                                        set Power v
set Power v
right_drive v to 0
Left_drive v to 0
call 1. Small Red . Sieep
                                                         go back, knock off blue
                                                            go back, knock off blue
set [eff_drive*]. Power* to $\[ \bigs_{-0.2} \]
set [right_drive*]. Power* to $\[ \bigs_{-0.2} \]
call [1. Small Red]. sleep
milliseconds $\[ \bigs_{-0.2} \]
                              set Power to 0 0 call (1. Small Red ... Seep milliseconds 0 200 set Jewel Color ... Position 1 to 0 0.36 call (1. Small Red ... Sleep milliseconds 0 500
                                               go forward
set Power **
iright_drive ** to 0.3
left_drive ** to 0.3
cal 1. Small Red . sleep
milliseconds | 1500
set Power **
iright_drive ** to 0
left_drive ** to 0
cal 1. Small Red . sleep
milliseconds | 1000
(furn)
                                                         set Power v
                                                  milliseconds 750
set Power 1 0 0
left drive 1 0 0
call 1. Small Red 1. sleep
milliseconds 1000
final forward to deposit glyphs
set left drive 2 Power 1 0 0
                                                         inal forward to deposit glyphs
set [eff_drive*]. Power* to 0.19
set [right_drive*]. Power* to 0.19
call 1. Small Red . sleep
milliseconds 0.1900
else No Jewel
                                                                call (AndroidTextToSpeech). speak
                                        text | ** | I see nothing ** |
call 1. Small Red | sleep | milliseconds | 1200 |
call AndroidTextToSpeech | speak | text | ** | I don't see a jewel ** |
set Jewel Color ** | Position ** | to | 0.36 |
call 1. Small Red | sleep | milliseconds | 1500 |
set left_drive ** | Direction * | to | Direction | REVERSE ** |
set light_drive ** | Direction * | to | Direction | FORWARD ** |
set Power ** | right_drive ** | to | 0 |
left_drive ** | to | to | to | to |
left_drive ** | to | to | to | to |
left_drive ** | to | to | to | to |
left_drive ** | to | to | to |
left_drive ** | to | to | to |
left_drive ** | to | to | to |
left_drive ** | to | to | to |
left_drive ** | to |
left_drive ** | to | to |
left_drive ** | to |
```

```
miliseconds 1000
set left_drive Power to 1-0.4
set light_drive Power to 0.8
cal 1. Small Red I sleep
miliseconds 790
final forward to depost glyphs
                                                                                                                                                             final forward to deposit glyphs
set Power **
right_drive ** to 0
call 1. Small Red . sleep
milliseconds **
right_drive ** to 0.19
left_drive ** to 0.19
left_drive ** to 0.19
call 1. Small Red . sleep
milliseconds **
1800
                         call Telemetry . update
set Power vi
right_drive vi to 0
call 1. Small Red . sleep
milliseconds vi 500
                                drop
                             set Jewel Color Position to 0.36
set slider Direction to Direction REVERSE
set slider Power America
set slider ** Direction ** to ** Direction REVERSE **
set Slider ** Power ** to ** 0.16
set slider ** Direction ** to ** Direction FORWARD **
set slider ** Direction ** to ** Direction FORWARD **
set slider ** Power ** to ** 0
back up
set left_drive ** Direction ** to ** Direction REVERSE **
set left_drive ** Direction ** to ** Direction FORWARD **
set left_drive ** Direction ** to ** Direction FORWARD **
set left_drive ** Power ** to ** 0
call 1. Small Red ** sleep
milliseconds ** 2000

set left_drive ** Power ** to ** 0.3
```