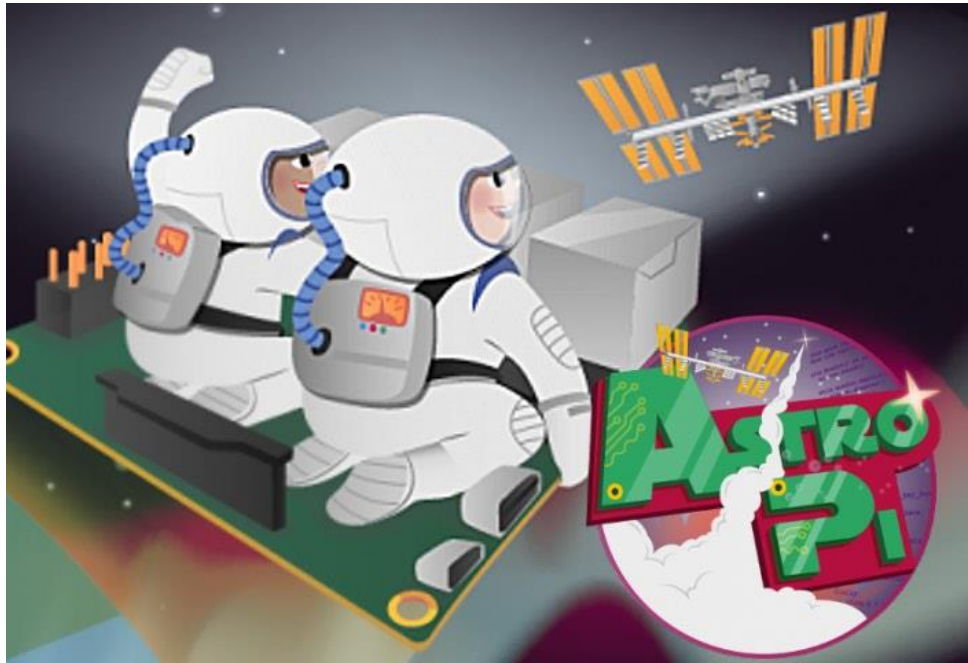
Challenge 1: Sag „HI“

```
#allow the program to use the Sense HAT hardware
from sense_hat import SenseHat

#allow the program to use the time module
import time

#create a sense object wich represents the Sense HAT
sense = SenseHat()

sense.show_letter("H")
time.sleep(0.5)
sense.show_letter("I")
time.sleep(0.5)

#reset the LEDs to off
sense.clear()
```

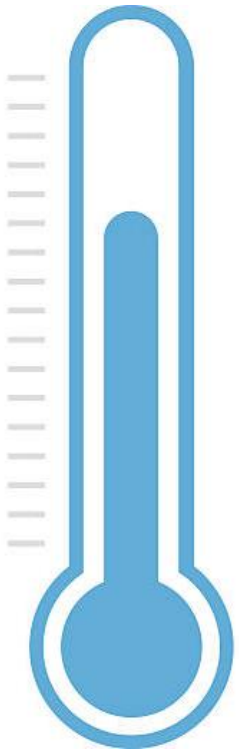


Challenge 2: Text anzeigen

```
#allow the program to use the Sense HAT hardware
from sense_hat import SenseHat

#create a sense object wich represents the Sense HAT
sense = SenseHat()

#make the Sense HAT show the text
sense.show_message("Hello!", scroll_speed=0.05, text_colour=(100,100,255), back_colour=(50,0,0))
sense.clear()
```

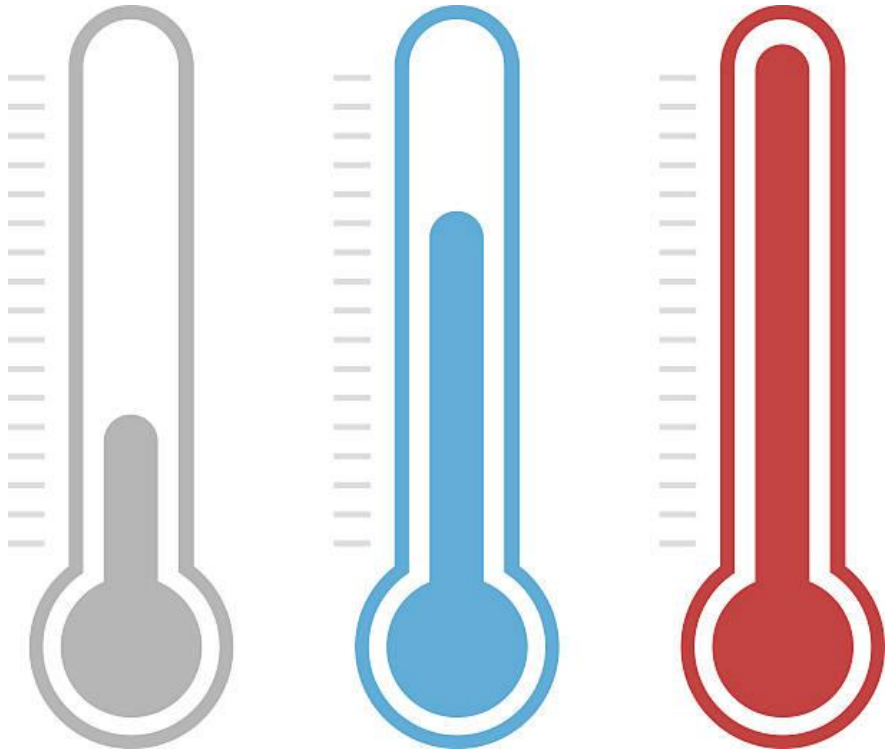
Challenge 3: Raumtemperatur messen

```
#allow the program to use the Sense HAT hardware
from sense_hat import SenseHat

#create a sense object wich represents the Sense HAT
sense = SenseHat()

#collect temperature and store it as temp
temp=sense.get_temperature()

#round the value of the temperature with two decimal points
temp = round(temp, 2)

#change the number to a string
temp = str(temp)

sense.show_message(temp)
```



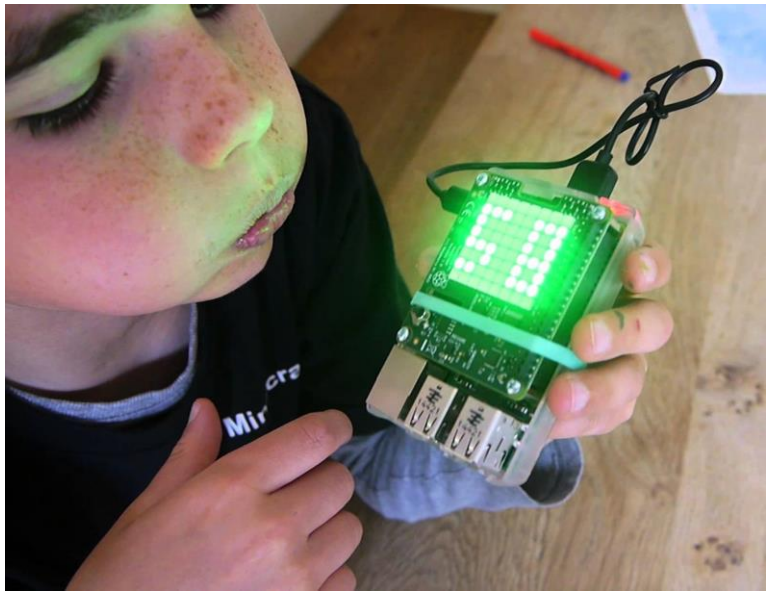
Challenge 4: Temperaturen farbig anzeigen

```
from sense_hat import SenseHat
sense = SenseHat()

#collect temperature and store it as temp
temp=sense.get_temperature()

temp = round(temp, 2)

if temp > 26:
  colour = (255,0,0)
elif temp < 22:
  colour = (0,0,255)
elif 22<=temp<=26:
  colour = (255,255,255)

#change the number to a string
temp = str(temp)

sense.show_message(temp, text_colour=colour)
```



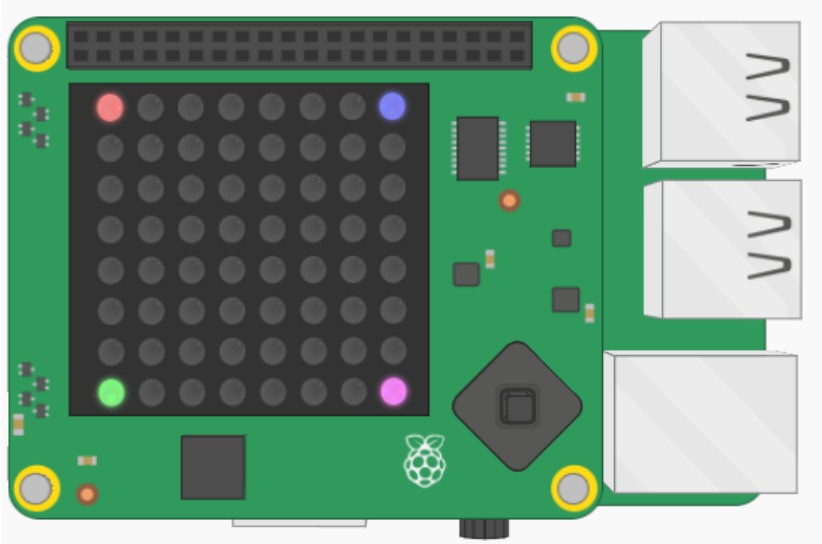
Challenge 5: Luftfeuchtigkeit messen

```
from sense_hat import SenseHat
import time

sense = SenseHat()

while True:
  humidity = sense.get_humidity()
  humidity = round(humidity,2)

  if humidity<65:
    bg = [0,100,0]

  else:
    bg = [100,0,0]

  humidity = str(humidity)
  sense.show_message(humidity, scroll_speed=0.05, back_colour=bg)
```



Challenge 6: Einzelne Pixel anzeigen:

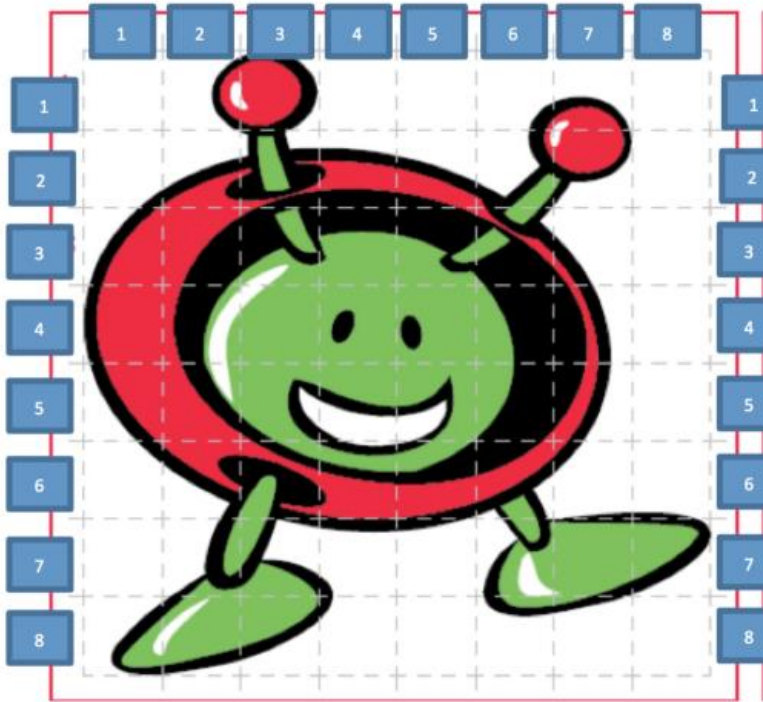
```
from sense_hat import SenseHat

sense = SenseHat()

sense.clear()

#.set_pixel(x,y,r,g,b)

sense.set_pixel(0,0,255,0,0)
sense.set_pixel(0,7,0,255,0)
sense.set_pixel(7,0,0,0,255)
sense.set_pixel(7,7,255,0,255)
```



Challenge 7: Bild anzeigen

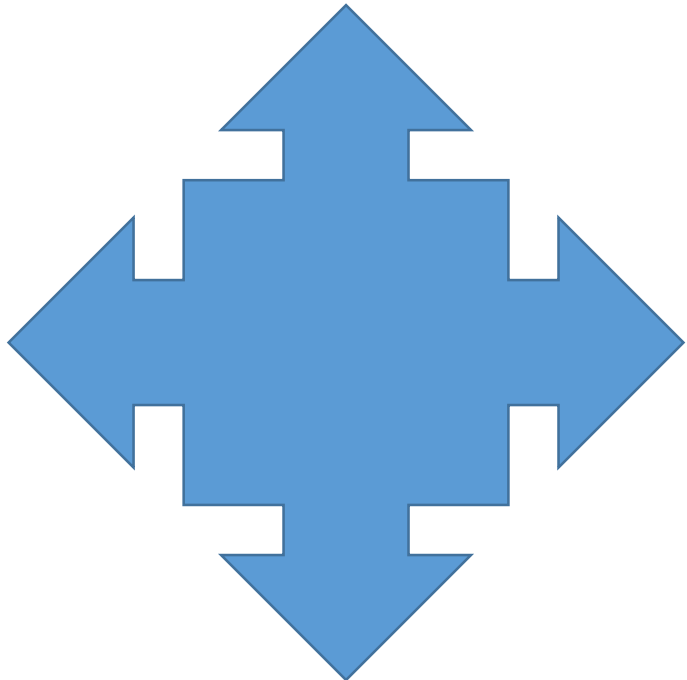
```
from sense_hat import SenseHat

sense = SenseHat()

w = [255, 255, 255]
r = [255, 0, 0]
o = [255, 127, 0]
y = [255, 255, 0]
g = [0, 255, 0]
b = [0, 0, 255]
i = [75, 0, 130]
v = [159, 0, 255]
e = [0, 0, 0] #e = empty/black
```

```
image = [
w,w,r,w,w,w,w,w,
w,w,g,r,r,w,r,w,
w,r,g,g,g,g,w,w,
r,r,g,g,g,g,r,w,
r,r,g,w,w,g,r,w,
w,w,r,r,r,r,w,w,
w,g,w,w,w,g,g,g,
g,g,g,w,w,w,w,w,
]

sense.set_pixels(image)
```



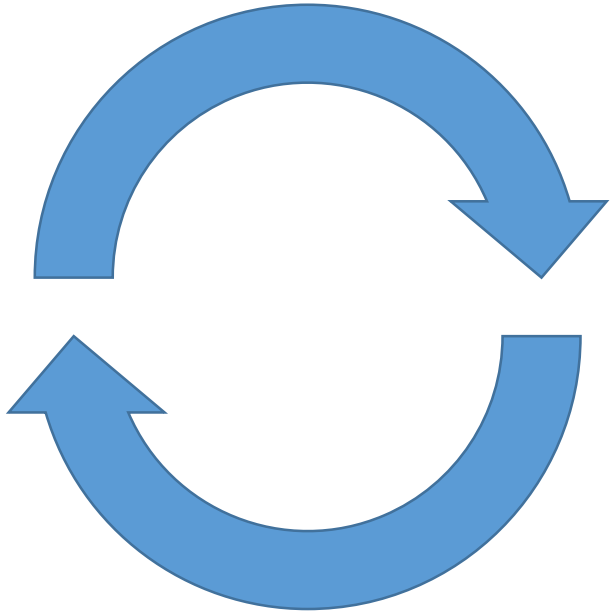
Anzeige horizontal und vertikal spiegeln:

```
from sense_hat import SenseHat
import time

sense = SenseHat()

sense.clear()
sense.show_letter("R")

while True:
  #flip horizontally
  sense.flip_h()
  time.sleep(0.5)

  #flip vertically
  sense.flip_v()
  time.sleep(0.5)
```



Anzeige rotieren:

```
from sense_hat import SenseHat
import time

sense = SenseHat()

sense.show_letter("A")

#create a list of angles to iterate trough
angles=[0, 90, 180, 270, 0]

#cycles through the angles, rotating
for r in angles:
  sense.set_rotation(r)
  time.sleep(0.5)
```



Countdown:

```
from sense_hat import SenseHat
import time

sense = SenseHat()

for i in range(9, 0, -1):
  i = str(i)
  sense.show_letter(i)
  time.sleep(1)


while True:
  sense.clear(255,0,0)
  time.sleep(0.5)
  sense.show_message("TAKEOFF!", scroll_speed=0.05)
```