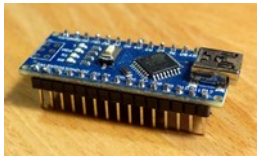
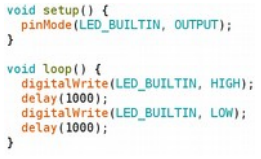
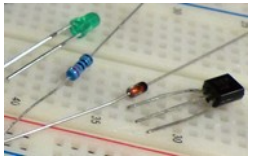
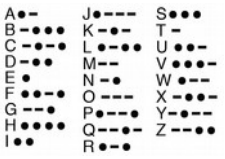
# Ph In Tec

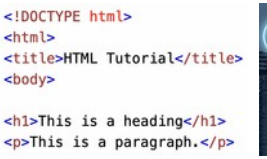
***Ph(ysik) – In(formatik) – Tec(hnik)***





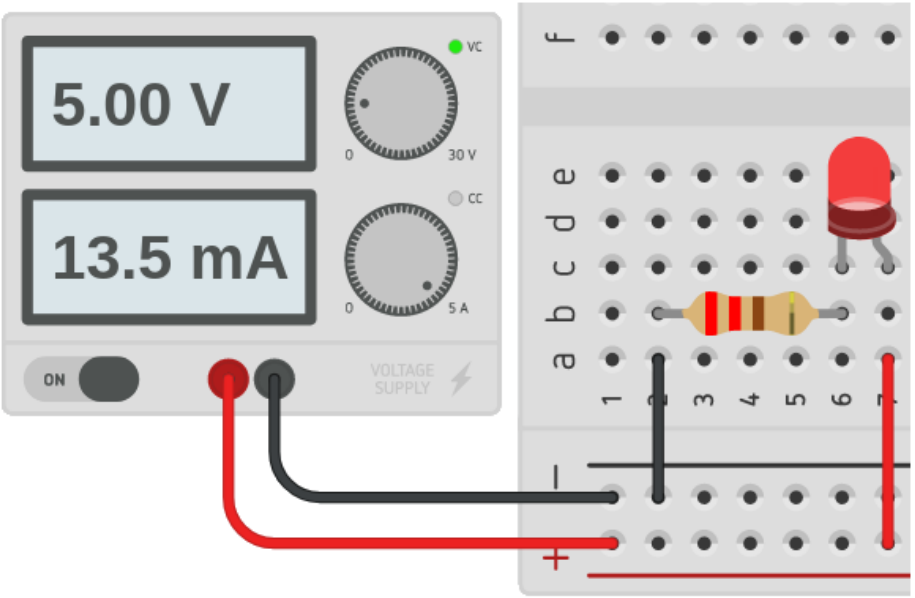


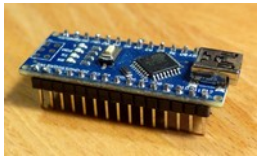



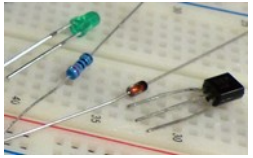
# Jahrgangsstufe 9 (Robotik):

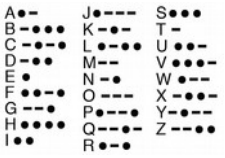
**Unterrichtsvorhaben I:**
**Einfache Stromkreise**

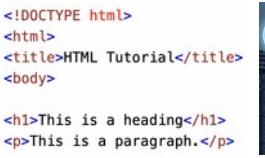
- **Reihenschaltung (LEDs mit Vorwiderständen, Spannungsteiler)**
- **Ohmsches Gesetz**
- **Schaltpläne zeichnen**



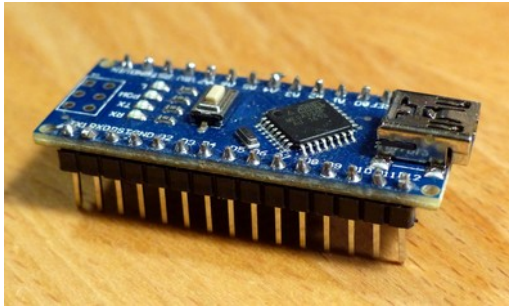




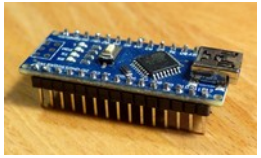
# *Jahrgangsstufe 9 (Robotik):*

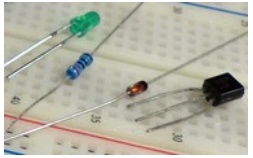
**Unterrichtsvorhaben II:**
**Microcontrollerprogrammierung**

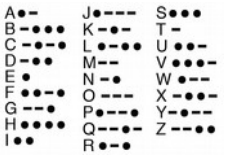


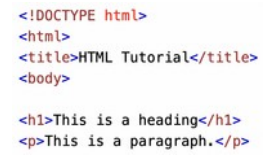
- **Ansteuern von LEDs durch Microcontroller (Arduino)**
- **Textbasiertes Programmieren**
- **Sensoren auslesen und Sensorwerte verarbeiten**

```
void setup() {
  pinMode(LED_BUILTIN, OUTPUT);
}

void loop() {
  digitalWrite(LED_BUILTIN, HIGH);
  delay(1000);
  digitalWrite(LED_BUILTIN, LOW);
  delay(1000);
}
```



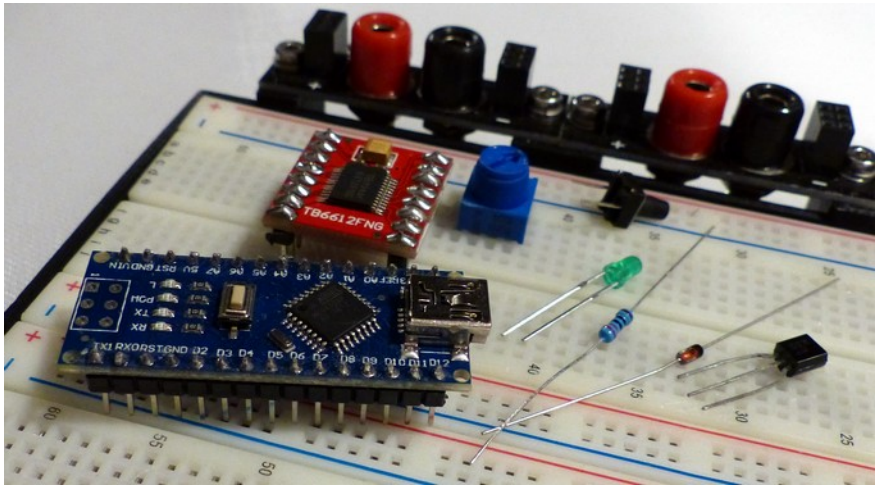




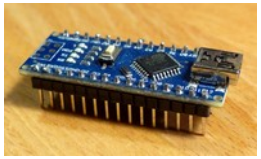



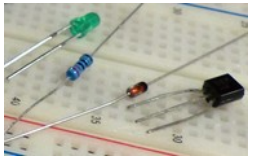
# *Jahrgangsstufe 9 (Robotik):*

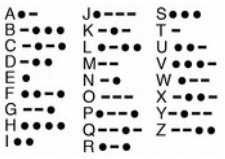
**Unterrichtsvorhaben III:**
**Transistoren und Schalter**

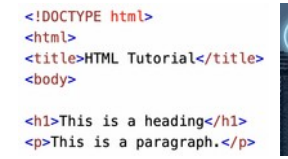



- **Transistorschaltungen**
- **Push-Up und Pull-Up Widerstände**
- **Schalter/Transistoren mittels Arduino ansteuern**
- **Ansteuerung von Motoren mittels Arduino**





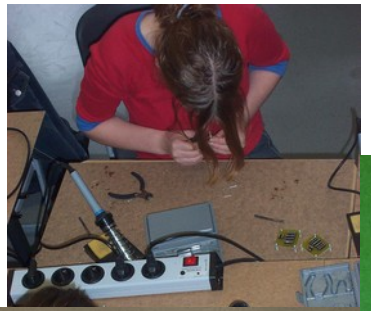
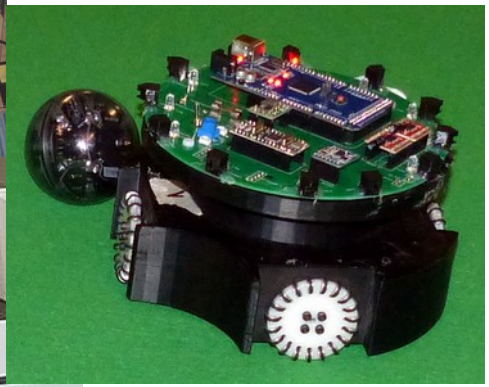


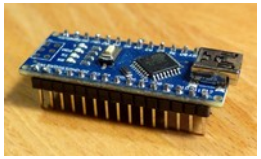



# *Jahrgangsstufe 9 (Robotik):*

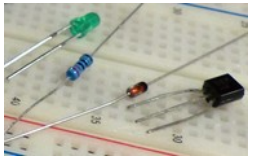
**Unterrichtsvorhaben IV:**
**Vertiefende Projekte**

- **Kursinterner Robotik-Wettbewerb**
- **Kleiner Lötkurs**
- **3D-Druck**
- **...**



```
void setup() {
  pinMode(LED_BUILTIN, OUTPUT);
}

void loop() {
  digitalWrite(LED_BUILTIN, HIGH);
  delay(1000);
  digitalWrite(LED_BUILTIN, LOW);
  delay(1000);
}
```



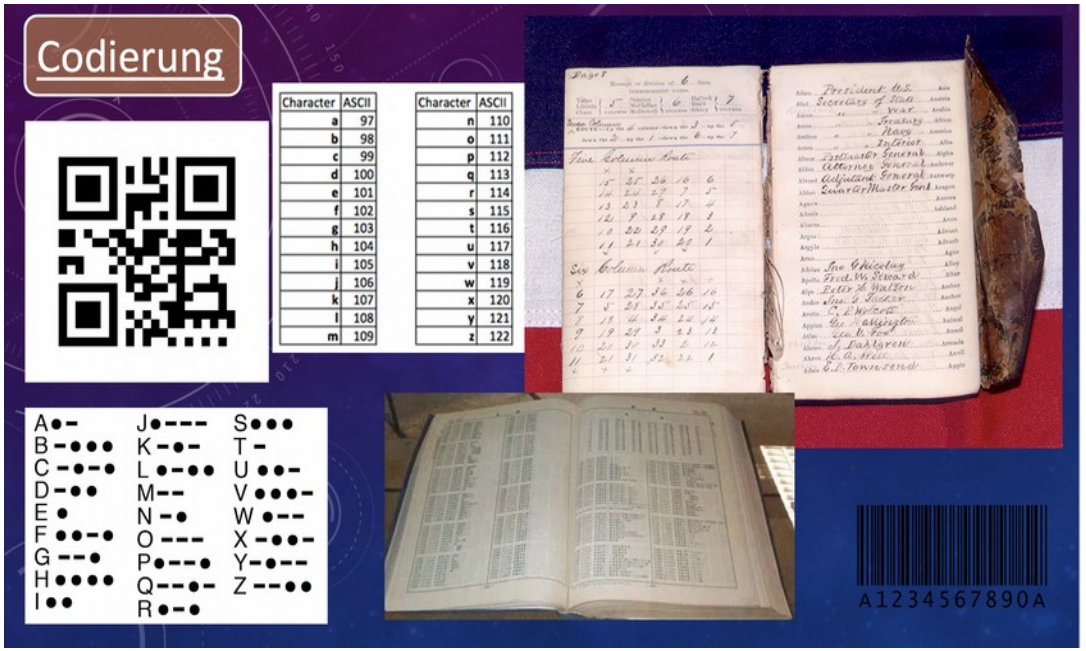
```
A•-    J•---  S•••
B-•••  K-•-   T-
C-•-•  L•-••  U••-
D-••   M--    V•••-
E•     N-•    W•--
F••-•  O---   X-••-
G--•   P•--•  Y-•--
H••••  Q--•-  Z--••
I••    R•-•
```

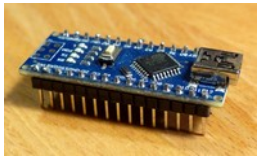
```
<!DOCTYPE html>
<html>
<title>HTML Tutorial</title>
<body>

<h1>This is a heading</h1>
<p>This is a paragraph.</p>
```

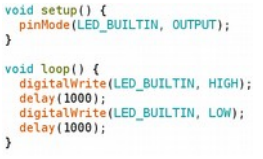
# Jahrgangsstufe 10:

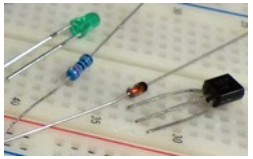
**Unterrichtsvorhaben I:**
**Geheim ist geheim**

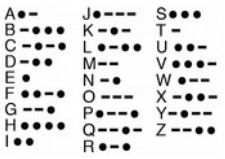
- **Kryptographie**
  - **Mit Verschlüsselung Daten sichern**
- **sichere Kommunikation**
- **Codierung**

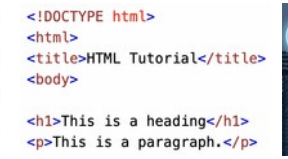






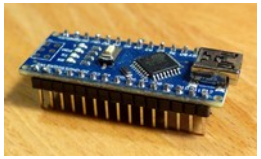
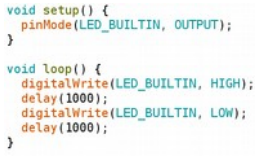



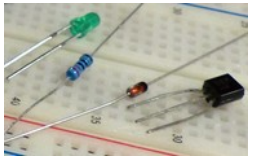
# *Jahrgangsstufe 10:*

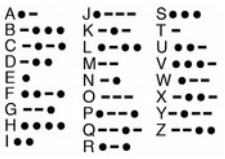
**Unterrichtsvorhaben II:**
**Webseiten gestalten**

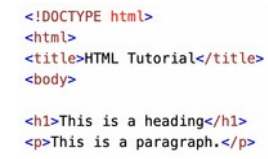
- **HTML**
- **CSS**
- **Praxisnah in Kooperation mit ortsansässigen Unternehmen**

```
<!DOCTYPE html>
<html>
<title>HTML Tutorial</title>
<body>

<h1>This is a heading</h1>
<p>This is a paragraph.</p>

</body>
</html>
```





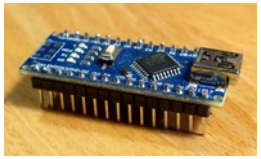


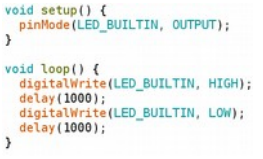
# *Jahrgangsstufe 10:*

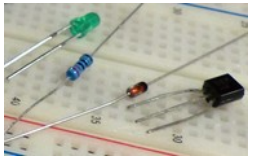
**Unterrichtsvorhaben III:**
**Vernetzte Welt**

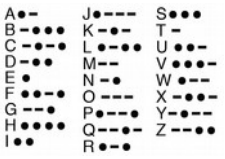
- **Allgegenwärtige Informationstechnologien**
- **Anwendung von Informationssystemen**

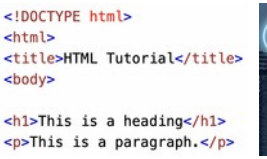
Technologie Foto erstellt von rawpixel.com – de.freepik.com



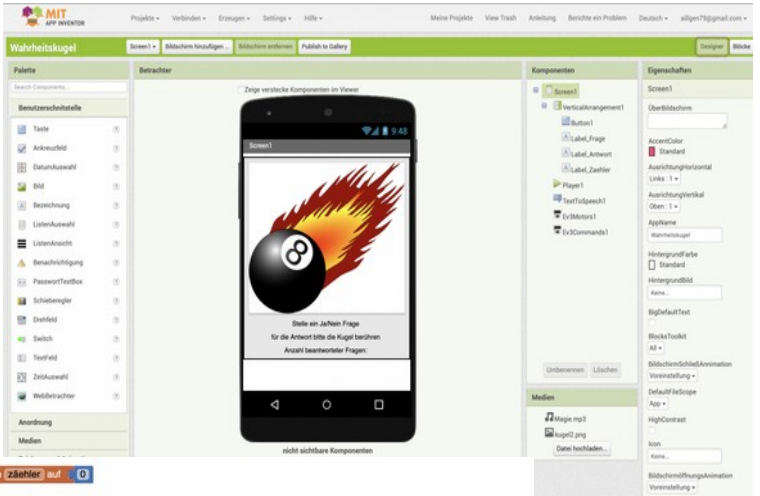
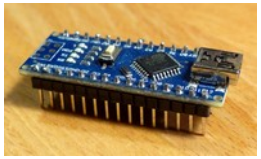
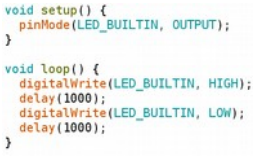
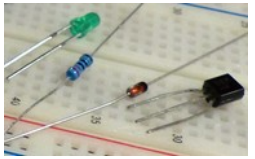
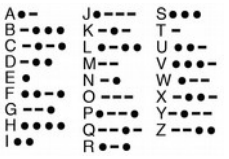




# Jahrgangsstufe 10:

## Unterrichtsvorhaben IV:
## Vertiefende Projekte

- **Programmieren von Smartphone-Apps**
- **Erstellen eines Webauftritts**
- **...**