

Siyavula API

Version	Date	Author	Rationale
1.0	15 July 2020	Lehan Coetzee and Richard Cochrane	First draft
1.1	22 September 2021	Lehan Coetzee	Add more details to mastery ToC
1.2	10 January 2022	Lehan Coetzee	Change Nigerian curriculum from NG to NERDC
1.3	30 November 2022	Lehan Coetzee	Add anonymous activity, update ToC success response.
1.3.1	28 August 2023	Lehan Coetzee	Remove legacy theming, reformat document.

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About Siyavula

Siyavula

Our mission is to create and enable engaging, integrated, high-quality learning experiences in Mathematics and the Sciences; to have a long-lasting, enriching impact on learners and teachers in South Africa and globally; to constantly seek out and build the most relevant, effective technology whilst remaining rooted in the science of learning and instruction; and to engage and motivate young minds, helping them to master and develop the skills our future needs.

Learn more: <https://www.siyavulaeducation.com/>

Siyavula Practice

Siyavula Practice is an online Maths and Physical Sciences practice service for high school learners. The program provides learners with virtually unlimited questions that become progressively more difficult as correct answers are given. Because Siyavula's practice adapts to the needs of the person practising by changing the difficulty and sequencing of questions, learners can progress at their own pace. They receive immediate feedback on the questions they do, with step-by-step solutions, and errors and misconceptions are corrected in real time. Siyavula Practice can be used by anyone with a computer, tablet or mobile phone (both smart and feature phones are supported) and an internet connection.

Learn more: <https://www.siyavula.com/>

Authenticating with the Siyavula API

The Siyavula API uses token-based authentication, this means that an authentication token must be provided in every request made to the API (see [Getting a token](#) for more details).

Requesting a token

```
curl --header "Content-Type: application/json" \
  --request POST \
  --data '{"name": "name", "password": "password", "region": "region",
"curriculum": "curriculum"}' \
  https://www.siyavula.com/api/siyavula/v1/get-token
```

Success Response

HTTP Code: 200

```
{
  "token": "eyJhbGciOiJIUzI1NiIsInR5cCI6IkpXVCJ...",
  "time_to_live": 3599.999599,
  "meta": null
}
```

Error Response

HTTP Code: 403

```
{
  "errors": [
    {
      "message": "Invalid credentials.",
      "code": "Forbidden"
    }
  ]
}
```

Accessing API Methods with an Authentication Token

After receiving a token, set the HTTP authorisation header for future requests: Authorization: JWT **[TOKEN]**. Where JWT is the HTTP header name and [TOKEN] is the token you just received.

With the JWT HTTP header in place accessing a protected resource is as easy as:

```
curl -L --header "Content-Type: application/json" \  
  --header 'JWT: [TOKEN]' \  
  https://www.siyavula.com/api/siyavula/v1/verify
```

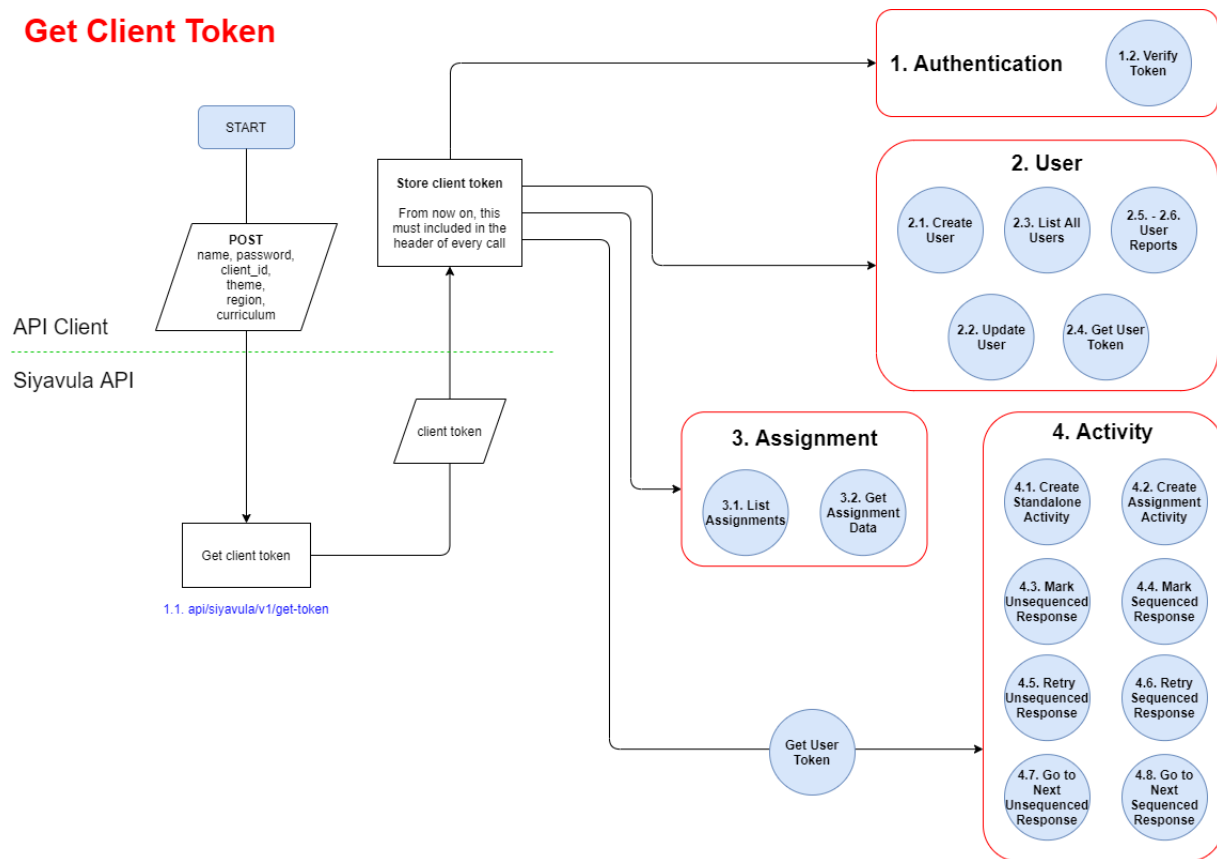
Siyavula API Methods

The following methods are available in the Siyavula API:

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 - Getting a user token
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- 5. Practice Table of Contents
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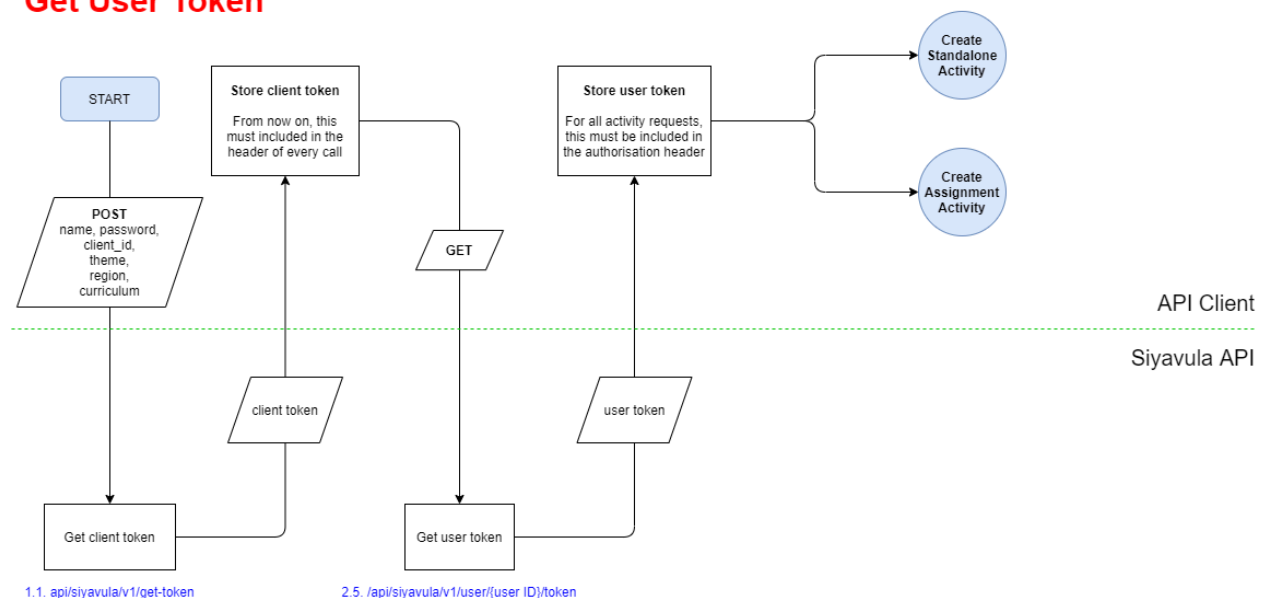
Overview

Get Client Token



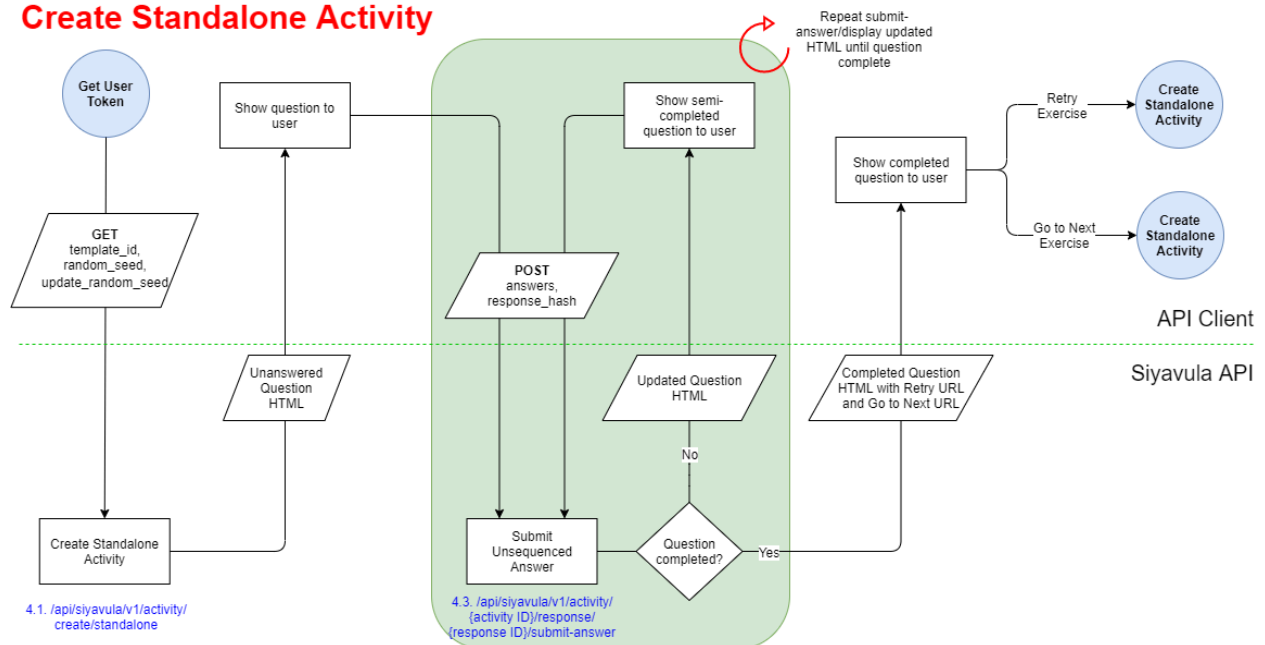
[Full Image](#)

Get User Token



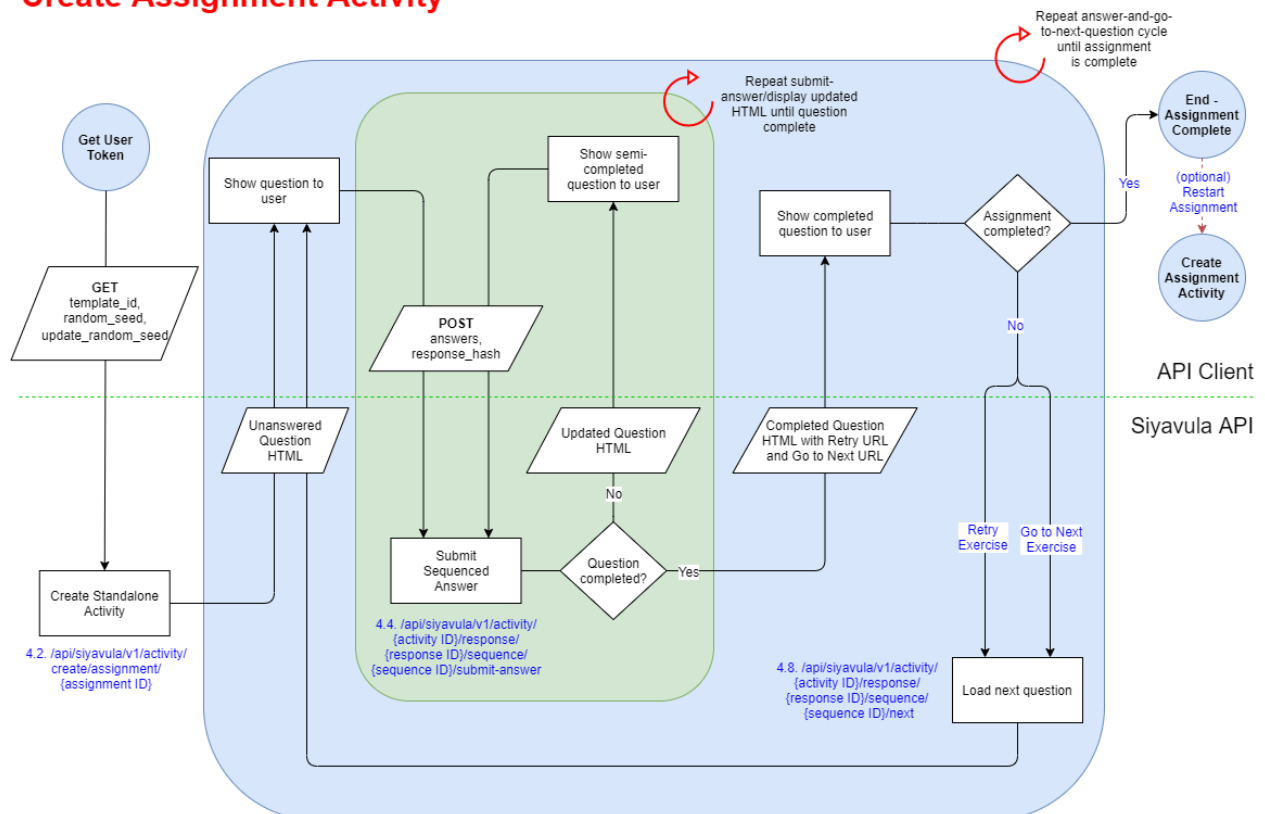
[Full Image](#)

Create Standalone Activity



[Full Image](#)

Create Assignment Activity



[Full Image](#)

1. Authentication

1.1. Retrieve client token

Retrieves a new authentication token to be used to authenticate subsequent requests.

Path: `api/siyavula/v1/get-token`

Renderer: JSON

Type: POST

Payload:

```
{
  "name": "name",
  "password": "password",
  "region": "ZA|NG|RW|INTL",
  "curriculum": "CAPS|NG|CBC|INTL"
}
```

Definitions

- name: Your organisation name provided by Siyavula.
- password: Your password provided by Siyavula.
- region: The country the template will be requested for.
 - ZA - South Africa
 - NG - Nigeria
 - RW - Rwanda
 - INTL - International* If you're country is not listed under the options please use "INTL"
- curriculum: The curriculum the template will be requested for.
 - CAPS - South Africa (CAPS & IEB)
 - NERDC - Nigeria (NERDC)
 - CBC - Rwanda (CBC)
 - INTL - International (topic-based)

Success Response

HTTP status: 200

```
{
  "token": "eyJhbGciOiJIUzI1NiIsInR5cCI6IkpXVCJ...",
  "time_to_live": 3599.999599,
  "meta": null,
}
```

Error Response

HTTP status: 403

```
{
  "errors": [
    {
      "message": "Invalid credentials.",
      "code": "Forbidden"
    }
  ]
}
```

1.2. Verify Token

Verifies that the token is valid and until when it will remain valid (time to live).

Path: api/siyavula/v1/verify

Renderer: JSON

Type: GET

Header: JWT [token]

Payload: None

Success Response

HTTP status: 200

```
{
  "is_token_valid": true,
  "time_to_live": 3599.999599,
  "meta": null,
}
```

Error Response

HTTP status: 403

```
{
  "is_token_valid": false,
  "errors": [
    {
      "message": "why the token is invalid",
      "code": "Unauthorized"
    }
  ]
}
```

2. User Admin

2.1. Create user

Create a new user account.

Path: /api/siyavula/v1/user

Renderer: JSON

Type: POST

Header: JWT [token]

Payload:

```
{
  "external_user_id": "123",
  "role": "Learner",
  "name": "Jannie",
  "surname": "Moolman",
  "password": "123456",
  "grade": 8,
  "country": "ZA",
  "curriculum": "CAPS",
  "email": "jannie123@moolman.co.za",
  "dialling_code": "27",
  "telephone": "725491550"
}
```

Success Response

HTTP status: 200

```
{
  "external_user_id": "123",
  "surname": "Moolman",
  "grade": 8,
  "curriculum": "CAPS",
  "telephone": "725491550",
  "meta": null,
  "name": "Jannie",
  "uuid": "53a305f5-1f7e-40c9-b65a-4d640c6c5d55",
  "country": "ZA",
  "role": "Learner",
  "dialling_code": "27",
  "email": "jannie123@moolman.co.za"
}
```

}

Definitions

- External_user_id: The user's ID on your system.
- Role: Either "Learner" or "Teacher".
- Name: The user's name.
- Surname: The user's surname.
- Password: The user's password (can be auto-generated).
- Grade: The user's grade or level in a school. For teachers this would be the grade they teach.
- Country: The country where the user resides. Should be in the two-letter ISO 3166-1 alpha-2(<https://www.iso.org/obp/ui/#search>) format specification.
- Curriculum: The curriculum the template will be requested for:
 - CAPS: South Africa (CAPS & IEB)
 - NG: Nigeria (NERDC)
 - CBC: Competence Based Curriculum
 - INTL: International (topic-based)
- Email: The user's email address.
- Dialling_code: The user's two-number dialling code, **excluding the "+"**.
- Telephone: The user's telephone number, **excluding the dialling code**.

2.2. Get user

Get the user profile via the API

Path: /api/siyavula/v1/user/{user ID}

Renderer: JSON

Type: GET

Header: JWT [token]

Success Response

HTTP status: 200

```
{
  "external_user_id": "123",
  "surname": "Moolman",
  "grade": null,
  "curriculum": "CAPS",
  "telephone": "725491550",
  "name": "Jannie",
  "uuid": "53a305f5-1f7e-40c9-b65a-4d640c6c5d55",
  "country": "ZA",
  "role": "Learner",
  "dialling_code": "27",
  "email": "jannie123@moolman.co.za"
}
```


2.3. Update user

Update the user profile via the API

Path: /api/siyavula/v1/user/{user ID}

Renderer: JSON

Type: PUT

Header: JWT [token]

Payload:

```
{
  "external_user_id": "123",
  "role": "Learner",
  "name": "Jannie",
  "surname": "Moolman",
  "grade": 8,
  "country": "ZA",
  "curriculum": "CAPS",
  "email": "jannie123@moolman.co.za",
  "dialling_code": "27",
  "telephone": "725491550"
}
```

Success Response

HTTP status: 200

```
{
  "external_user_id": "123",
  "surname": "Moolman",
  "grade": 8,
  "curriculum": "CAPS",
  "telephone": "725491550",
  "meta": null,
  "name": "Jannie",
  "uuid": "53a305f5-1f7e-40c9-b65a-4d640c6c5d55",
  "country": "ZA",
  "role": "Learner",
  "dialling_code": "27",
  "email": "jannie123@moolman.co.za"
}
```

2.4. Get users

Get a list of all users related to the client.

Path: /api/siyavula/v1/users

Renderer: JSON

Type: GET

Header: JWT [token]

Success Response

HTTP status: 200

```
[
  {
    "external_user_id": "123",
    "surname": "Moolman",
    "grade": 8,
    "curriculum": "CAPS",
    "telephone": "725491550",
    "name": "Jannie",
    "uuid": "53a305f5-1f7e-40c9-b65a-4d640c6c5d55",
    "country": "ZA",
    "role": "Learner",
    "dialling_code": "27",
    "email": "jannie123@moolman.co.za"
  }
]
```

2.5. Get user token

Get a JSON web token for managing sessions via the API.

Path: /api/siyavula/v1/user/{user ID}/token

Renderer: JSON

Type: GET

Header: JWT [token]

Success Response

HTTP status: 200

```
{
  "token": "eyJhbGciOiJIUzUxMiIsInR5cCI6IkpXVCJ9",
  "meta": null,
  "time_to_live": 3599.999866
}
```

2.6. Get user practice report

Get the response data for a given user for all question activity.

Path: /api/siyavula/v1/user/{user ID}/report/practice

Renderer: JSON

Type: GET

Header: JWT [token]

Success Response

HTTP status: 200

```
{
  "data": [
    {
      "random_seed": 270563,
      "responses": [
        [
          "0",
          "1"
        ]
      ],
      "attempted": true,
      "durations": [
        7
      ],
      "marks": [
        [
          1.0,
          1
        ]
      ],
      "difficulty": 1,
      "subject": "Mathematics",
      "correctness": true,
      "correct": [
        [
          1,
          1
        ]
      ],
      "created_date": "2020-07-16T10:21:19.934768+02:00",
    }
  ]
}
```

```
        "template_id": 1762,  
        "activity_type": "Assignment"  
    },  
]  
}
```

2.7. Get user assignment report

Get the response data for a given user and assignment.

Path: /api/siyavula/v1/user/{user ID}/report/assignment/{assignment ID}

Renderer: JSON

Type: GET

Header: JWT [token]

Success Response

HTTP status: 200

```
{
  "attempts": 1,
  "completion": 0,
  "performance": 0,
  "data": [
    {
      "random_seed": 269877,
      "responses": [
        null
      ],
      "attempted": false,
      "durations": [],
      "marks": [],
      "difficulty": 1,
      "subject": "Mathematics",
      "correctness": null,
      "correct": [],
      "created_date": "2020-07-09T08:38:50.740845+02:00",
      "template_id": 1762,
      "activity_type": "Assignment"
    }
  ]
}
```

2.8. Get user Table of Contents with mastery applied

Returns the Table of Contents for a specific user and grade with their chapter and section mastery applied.

Options:

Available subjects are based on the country/curriculum (specified on token creation):

- **ZA:** 'maths' or 'science'
- **NG:** 'maths'
- **RW:** 'maths', 'physics' or 'chemistry'
- **INTL:** 'maths', 'physics' or 'chemistry'

Available grades are based on the country/curriculum (specified on token creation) and the subject selected:

- **ZA:**
 - maths: 8, 9, 10, 11 or 12
 - science: 10, 11 or 12
- **NG:**
 - maths: 7, 8, 9, 10, 11 or 12
- **RW:**
 - maths: 7, 8, 9, 10
 - physics: 7, 8, 9, 10
 - chemistry: 7, 8, 9, 10
- **INTL:**
 - maths: 7, 8, 9, 10, 11 or 12
 - physics: 7, 8, 9, 10, 11 or 12
 - chemistry: 7, 8, 9, 10, 11 or 12

Path: `api/siyavula/v1/toc/user/{User ID}/subject/{Subject}/grade/{Grade}`

Renderer: JSON

Type: GET

Header: JWT [token]

Success Response

HTTP status: 200

```
{
  "id": 3,
  "grade": 8,
  "title": "Everything Maths, Grade 8",
  "chapters": [
    {
```

```

    "id": 29,
    "number": 1,
    "title": "Whole numbers",
    "mastery": 10.03,
    "sections": [
      {
        "id": 204,
        "number": 1,
        "title": "Properties of whole numbers",
        "mastery": 50.16
      },
      {
        "id": 230,
        "number": 2,
        "title": "Calculations using whole numbers",
        "mastery": 0
      },
      {
        "id": 254,
        "number": 3,
        "title": "Prime factorisation",
        "mastery": 0
      },
      {
        "id": 256,
        "number": 4,
        "title": "Solving problems: ratios & rates",
        "mastery": 0
      },
      {
        "id": 267,
        "number": 5,
        "title": "Solving problems: finance",
        "mastery": 0
      }
    ],
  },
],
}

```


3. Assignment Admin

3.1. Get assignments

Get a list of all assignments related to the client.

Path: /api/siyavula/v1/assignments

Renderer: JSON

Type: GET

Header: JWT [token]

Success Response

HTTP status: 200

```
[
  {
    "due_date": "2020-02-18T12:00:00",
    "title": "Maths Assignment",
    "id": 4828,
    "created_date": "2019-04-26T14:06:24.787304",
    "start_date": "2020-02-17T09:30:00.036696",
    "subject": "Mathematics"
  }
]
```

3.2. Get assignment

Get the data related to a specific assignment.

Path: /api/siyavula/v1/assignment/{assignment ID}

Renderer: JSON

Type: GET

Header: JWT [token]

Success Response

HTTP status: 200

```
{
  "due_date": null,
  "title": "Maths Assignment",
  "id": 9662,
  "created_date": "2020-07-08T13:43:14.101096",
  "start_date": "2020-07-08T13:43:14.113808",
  "subject": "Mathematics"
}
```

4. Activity

An “activity” with Siyavula is a block of time spent doing questions. It typically goes through the following stages:

- **Creation**: the activity is started and the user is taken to the first question in that activity
- **Answer**: the user attempts to answer the question correctly
- **Progression**: either the user will attempt to retry the same question or move on the next question (when applicable)

There are two broad categories of activities:

- **Sequenced**: in a sequenced activity, numerous questions should be completed in succession - completing one question leads to another question until the activity is complete. Assignments are one implementation of this activity type but in future, there may be more.
- **Unsequenced**: In these activities, there is only one question to be done and while the user can attempt to retry the question or go to the next question, it will remain on the same question, albeit with a different random seed. You could conceivably have a sequenced activity with just one question but the underlying architecture will still regard that as a sequenced activity. Standalone questions are one implementation of unsequenced activities, so named because the question exists in isolation - not existing in any particular context.

Sequenced	Unsequenced
Assignment	Anonymous
	Standalone
	Practice

The response for most of the activity API calls will be in this format:

```
{
  "response": {
    "id": "1f99a869-6206-417d-be44-96e2133457db",
    "complete": false,
    "question_html": "<form>...</form>"
    "template_id": 2122
    "random_seed": 487029
  },
  "activity": {
```

```

        "id": "368015d8-c553-47de-a6fc-ea296f26fc50",
        "sequence_id": 6111754,
        "retry_url": null,
        "next_url": null
    },
    "assignment": {
        "complete": false,
        "correct": [null, null, null],
        "correct_count": 2,
        "current_index": 0,
        "question_count": 3
    },
    "meta": null
}

```

Response

These are details related specifically to the current question being shown:

- **id**: the unique identifier for the response (UUID-format)
- **complete**: True if the question is complete and False otherwise
- **question_html**: the html for the question
- **template_id**: the integer ID representing the specific template
- **random_seed**: the anchor to a particular random variation of the question

Activity

These are details related to the activity as a whole:

- **id**: the unique identifier for the activity (UUID-format)
- **sequence_id**: a unique integer identifier where applicable and "null" otherwise
- **retry_url**: the url to be used to request a retry of the current question
- **next_url**: the url to be used to request the next question available in the activity
- **Note!** *retry_url* and *next_url* are blank strings until the response is complete (i.e. you must first complete the current question before you get the progression links)

Assignment

When applicable (in all sequenced activities), these details contain information about the users' progression through the assignment:

- **complete**: True if the assignment as a whole is complete and False otherwise
- **correct**: an array of values representing the various attempts at questions in the assignment - null for not-yet-attempted, True for successful completion and False for incorrect answers, eg:
 - [true, null]: 2-question assignment - 1st question correct, 2nd question not attempted
 - [false, false]: 2-question assignment - both questions were incorrect

- [null, null, null]: 3-question assignment - no questions attempted
- **correct_count**: the integer number of questions answered correctly
- **current_index**: the 0-based index of which question in the assignment sequence is where the user is (0 is the very first question, 1 is the second, etc.)
- **question_count**: the number of questions in the assignment

4.1. Creation

Anonymous

Create an unsequenced anonymous activity (single question). This activity does not require an authorisation header for the user which makes it ideal if you just need to embed a question to be answered without tracking a learner's progress.

Path: /api/siyavula/v1/activity/create/anonymous/{template_id}/{random_seed}

Renderer: JSON

Type: POST

Header: JWT [clientToken]

Payload:

```
{
  "sandbox_mode": true
}
```

- **sandbox_mode**: This is an optional parameter that will render the full question with all content exposed i.e. steps, answers and hints. This is useful for content creators to quickly get an overview of a question.

Success Response

HTTP status: 200

```
{
  "template_id": "2122",
  "random_seed": "487029",
  "response": {
    "question_html": "<form>...</form>"
  },
  "meta": null
}
```

Standalone

Create an unsequenced standalone activity (single question).

Path: /api/siyavula/v1/activity/create/standalone

Renderer: JSON

Type: POST

Header: JWT [clientToken]

Authorization: 'JWT ' + userToken

Payload:

```
{
  "template_id": 2122,
  "random_seed": 487029
}
```

Success Response

HTTP status: 200

```
{
  "response": {
    "id": "1f99a869-6206-417d-be44-96e2133457db",
    "complete": false,
    "question_html": "<form>...</form>",
    "template_id": 2122,
    "random_seed": 487029
  },
  "activity": {
    "id": "368015d8-c553-47de-a6fc-ea296f26fc50",
    "sequence_id": null,
    "retry_url": null,
    "next_url": null
  },
  "meta": null
}
```

Assignment

Create a sequenced assignment activity.

Path: /api/siyavula/v1/activity/create/assignment/{assignment ID}

Renderer: JSON

Type: GET

Header: JWT [clientToken]

Authorization: 'JWT ' + userToken

Payload: None

Success Response

HTTP status: 200

```
{
  "response": {
    "id": "1f99a869-6206-417d-be44-96e2133457db",
    "complete": false,
    "question_html": "<form>...</form>",
    "template_id": 2122
    "random_seed": 487029
  },
  "activity": {
    "id": "368015d8-c553-47de-a6fc-ea296f26fc50",
    "sequence_id": 6111754,
    "retry_url": null,
    "next_url": null
  },
  "assignment": {
    "complete": false,
    "correct": [null, null, null],
    "correct_count": 2,
    "curent_index": 0,
    "question_count": 3
  },
  "meta": null
}
```

Practice

Create a practice activity.

The Section ID can be retrieved from the Table of Contents route.

Path: /api/siyavula/v1/activity/create/practice/{section ID}

Renderer: JSON

Type: GET

Header: JWT [clientToken]

Authorization: 'JWT ' + userToken

Success Response

HTTP status: 200

```

{
  "activity": {
    "id": "ed7154a3-011b-4cf9-adc5-20e8263bce41",
    "sequence_id": null,
    "retry_url": null,
    "next_url": null
  },
  "response": {
    "id": "ac881799-ba59-47dc-afe6-704a9f599c3f",
    "complete": false,
    "question_html": "<form></form>",
    "random_seed": 296853,
    "template_id": 1770
  },
  "practice": {
    "chapter": {
      "id": 29,
      "title": "Whole numbers",
      "mastery": 2.5
    },
    "section": {
      "id": 204,
      "title": "Properties of whole numbers",
      "mastery": 12.5
    }
  },
  "meta": null
}

```

4.2. Answer

Sequenced

Submit a user response(s) to be marked and solved in a sequenced activity.

Path: /api/siyavula/v1/activity/{activity ID}/response/{response ID}/sequence/{sequence ID}/submit-answer

Renderer: JSON

Type: POST

Header: JWT [clientToken]

Authorization: 'JWT ' + userToken

Payload:

question1a=20&question1b=-13&response_hash=2020-07-16T11%3A58%3A40.953301

- **Note: This is just the raw form data.**

Definitions

- **user_responses:** The HTML returned by /get-question contains a form, use the submitted form's key values as the value for user_responses.

Success Response

HTTP status: 200

```
{
  "response": {
    "id": "1f99a869-6206-417d-be44-96e2133457db",
    "complete": false,
    "question_html": "<form>...</form>"
    "template_id": 2122
    "random_seed": 487029
  },
  "activity": {
    "id": "368015d8-c553-47de-a6fc-ea296f26fc50",
    "sequence_id": 6111754,
    "retry_url": null,
    "next_url": null
  },
  "assignment": {
    "complete": false,
    "correct": [true, null, null],
    "correct_count": 2,
    "curent_index": 0,
    "question_count": 3
  },
  "meta": null
}
```

Unsequenced

Submit a user response(s) to be marked and solved in an unsequenced activity.

Path: /api/siyavula/v1/activity/{activity ID}/response/{response ID}/submit-answer

Renderer: JSON

Type: POST

Header: JWT [clientToken]

Authorization: 'JWT ' + userToken

Payload:

```
question1a=20&question1b=-13&response_hash=2020-07-16T11%3A58%3A40.953301
```

- **Note: This is just the raw form data.**

Definitions

- **user_responses:** The HTML returned by /get-question contains a form - use the submitted form's key values as the value for user_responses.

Success Response

HTTP status: 200

```
{
  "response": {
    "id": "1f99a869-6206-417d-be44-96e2133457db",
    "complete": false,
    "question_html": "<form>...</form>"
    "template_id": 2122
    "random_seed": 487029
  },
  "activity": {
    "id": "368015d8-c553-47de-a6fc-ea296f26fc50",
    "sequence_id": null,
    "retry_url": null,
    "next_url": null
  },
  "meta": null
}
```

Anonymous

Anonymous activities use a legacy implementation to submit answers which will be rectified in future.

Path: api/siyavula/v1/activity/anonymous/submit-answer/{template_id}/{random_seed}

Renderer: JSON

Type: POST

Header: JWT [clientToken]

Payload:

```
{
  "user_responses": {
```

```
    "question1a": "0",
    "question1b": "1",
    "question2a|readonly": ""
  }
}
```

Success Response

HTTP status: 200

```
{
  "template_id": "1805",
  "random_seed": "259974",
  "response": {
    "question_html": "<form>...</form>",
    "response_correct": [
      [
        1,
        1
      ]
    ],
    "response_marks": [
      [
        2,
        2
      ]
    ]
  },
  "meta": null
}
```

4.3. Progression

Retry question

Sequenced

Path: /api/siyavula/v1/activity/{activity ID}/response/{response ID}/sequence/{sequence ID}/retry

Renderer: JSON

Type: GET

Header: JWT [clientToken]

Authorization: 'JWT ' + userToken

Payload: None

Success Response

HTTP status: 200

```
{
  "response": {
    "id": "1f99a869-6206-417d-be44-96e2133457db",
    "complete": false,
    "question_html": "<form>...</form>",
    "template_id": 2122
    "random_seed": 487029
  },
  "activity": {
    "id": "368015d8-c553-47de-a6fc-ea296f26fc50",
    "sequence_id": 6111754,
    "retry_url": null,
    "next_url": null
  },
  "assignment": {
    "complete": false,
    "correct": [null, null, null],
    "correct_count": 2,
    "curent_index": 0,
    "question_count": 3
  },
  "meta": null
}
```

Unsequenced

Path: /api/siyavula/v1/activity/{activity ID}/response/{response ID}/retry

Renderer: JSON

Type: GET

Header: JWT [clientToken]

Authorization: 'JWT ' + userToken

Payload: None

Success Response

HTTP status: 200

```
{
  "response": {
```

```

        "id": "1f99a869-6206-417d-be44-96e2133457db",
        "complete": false,
        "question_html": "<form>...</form>"
        "template_id": 2122
        "random_seed": 487029
    },
    "activity": {
        "id": "368015d8-c553-47de-a6fc-ea296f26fc50",
        "sequence_id": null,
        "retry_url": null,
        "next_url": null
    },
    "meta": null
}

```

Next question

Sequenced

Path: /api/siyavula/v1/activity/{activity ID}/response/{response ID}/sequence/{sequence ID}/next

Renderer: JSON

Type: GET

Header: JWT [clientToken]

Authorization: 'JWT ' + userToken

Payload: None

Success Response

HTTP status: 200

```

{
    "response": {
        "id": "1f99a869-6206-417d-be44-96e2133457db",
        "complete": false,
        "question_html": "<form>...</form>"
        "template_id": 2122
        "random_seed": 487029
    },
    "activity": {
        "id": "368015d8-c553-47de-a6fc-ea296f26fc50",
        "sequence_id": 6111754,
        "retry_url": null,
        "next_url": null
    }
}

```

```
{
  "assignment": {
    "complete": false,
    "correct": [null, null, null],
    "correct_count": 2,
    "curent_index": 0,
    "question_count": 3
  },
  "meta": null
}
```

Unsequenced

Path: /api/siyavula/v1/activity/{activity ID}/response/{response ID}/next

Renderer: JSON

Type: GET

Header: JWT [clientToken]

Authorization: 'JWT ' + userToken

Payload: None

Success Response

HTTP status: 200

```
{
  "response": {
    "id": "1f99a869-6206-417d-be44-96e2133457db",
    "complete": false,
    "question_html": "<form>...</form>",
    "template_id": 2122,
    "random_seed": 487029
  },
  "activity": {
    "id": "368015d8-c553-47de-a6fc-ea296f26fc50",
    "sequence_id": 6111754,
    "retry_url": null,
    "next_url": null
  },
  "meta": null
}
```


5. Practice Table of Contents

The Siyavula API provides a Table of Contents (ToC) that lists the sections and templates per grade and subject. Two methods are available, one returns the entire ToC for all grades and subjects while the other returns the ToC for a specific user with their mastery for each chapter and section, the user mastery API method is located under the [User](#) section.

5.1. Table of Contents

Returns the entire Practice Activity Table of Contents grouped by subject and grade.

Path: /api/siyavula/v1/toc

Renderer: JSON

Type: GET

Header: JWT [token]

Success Response

HTTP status: 200

```
[
  {
    "id": 3,
    "grade": 8,
    "title": "Everything Maths, Grade 8",
    "chapters": [
      {
        "id": 29,
        "number": 1,
        "title": "Whole numbers",
        "sections": [
          {
            "id": 204,
            "number": 1,
            "title": "Properties of whole numbers",
            "templates": [
              {
                "id": 1762,
                "difficulty": 1.0,
                "examining_body": [
                  "DBE",
                  "IEB"
                ]
              }
            ]
          }
        ]
      }
    ]
  }
]
```



```
],
  "preview_random_seeds": [
    0,
    1,
    2,
    3,
    4,
    11
  ],
  "title": "Inequalities: comparing two
numbers",
  "variability_type": "variable"
}
]
}
```

Examples and Demos

Example Implementation

In order to simplify getting question instances and submitting a user's answers we've added a simple JavaScript library. The library automatically handles getting the question, detecting the answer form submission, marking the answer and managing the HTML state on the page.

To use the library for a **Standalone Activity** simply define your authentication token (generated in your back-end), activity_type, template_id and random_seed as JavaScript variables in the head section of your HTML file, for example:

```
<script type="text/javascript">
  token = 'eyJhbGciOiJIUzI1NiIsInR5cCI6IkpXVCJ9...';
  var activityType = 'standalone';
  var templateId = 2122;
  var randomSeed = 487029;
</script>
```

To use the library for an **Assignment Activity** simply define your authentication token (generated in your back-end), activity_type and assignment_id as JavaScript variables in the head section of your HTML file, for example:

```
<script type="text/javascript">
  var token = 'eyJhbGciOiJIUzI1NiIsInR5cCI6IkpXVCJ9...';
  var activityType = 'assignment';
  var assignmentId = 123;
</script>
```

Then, just before the closing body tag in your HTML include the following two scripts:

- https://www.siyavula.com/static/themes/emas/node_modules/mathjax/MathJax.js?config=TeX-MML-AM_HTMLorMML-full
 - *The MathJax script is used to render equations.*
- <https://www.siyavula.com/static/themes/emas/question-api/question-api.min.js>

If you would like to use our styles you can also include the following CSS style sheet in the head section of your HTML file:

- <https://www.siyavula.com/static/themes/emas/question-api/question-api.min.css>

With this in place, you should be done, open the file in your browser. The question should display and you should be able to complete a question.

Full HTML example (Standalone Activity):

```
<!DOCTYPE html>
<html>
  <head>
    <title>Siyavula API - Standalone Activity</title>
    <meta name="viewport" content="width=device-width, initial-scale=1"/>
    <link rel="stylesheet"
href="https://www.siyavula.com/static/themes/emas/question-api/question-api
.min.css"/>
    <script type="text/javascript">
      token = 'eyJhbGciOiJIUzI1NiIsInR5cCI6IkpXVCJ9...';
      var activityType = 'standalone';
      var templateId = 2122;
      var randomSeed = 487029;
    </script>
  </head>
  <body>
    <main class="sv-region-main emas sv">
      <div id="monassis" class="monassis monassis--practice monassis--maths
monassis--siyavula-api">
        <div class="question-wrapper">
          <div class="question-content"></div>
        </div>
      </div>
    </main>
  </body>
  <script
src="https://www.siyavula.com/static/themes/emas/node_modules/mathjax/MathJ
ax.js?config=TeX-MML-AM_HTMLorMML-full"></script>
  <script
src="https://www.siyavula.com/static/themes/emas/siyavula-api/siyavula-api.
min.js"></script>
</html>
```

Full HTML example (Assignment Activity):

```
<!DOCTYPE html>
<html>
  <head>
```

```

<title>Siyavula API - Assignment Activity</title>
<meta name="viewport" content="width=device-width, initial-scale=1"/>
<link rel="stylesheet"
href="https://www.siyavula.com/static/themes/emas/siyavula-api/siyavula-api
.min.css"/>
<script type="text/javascript">
  var token = 'eyJhbGciOiJIUzI1NiIsInR5cCI6IkpXVCJ9...';
  var activityType = 'assignment';
  var assignmentId = 123;
</script>
</head>
<body>
  <main class="sv-region-main emas sv">
    <div id="monassis" class="monassis monassis--practice monassis--maths
monassis--siyavula-api">
      <div class="question-wrapper">
        <div class="question-content"></div>
      </div>
    </div>
  </main>
</body>
<script
src="https://www.siyavula.com/static/themes/emas/node_modules/mathjax/MathJ
ax.js?config=TeX-MML-AM_HTMLorMML-full"></script>
<script
src="https://www.siyavula.com/static/themes/emas/siyavula-api/siyavula-api.
min.js"></script>
</html>

```

Siyavula API Demos:

Python

- <https://github.com/Siyavula/siyavula-api-python-pyramid>