



JABATAN PENDIDIKAN NEGERI PERAK
JALAN TUN ABDUL RAZAK,
30640 IPOH, PERAK DARUL RIDZUAN.

Telefon : 05-501 5000 Faks : 05-527 7273
portal : <http://jpnperak.moe.gov.my>



Ruj. Kami: J.Pel.PK (KOKU) 4531/5/14 Jld. 4 ()
Tarikh: 21 Jamadilakhir 1439H
7 Mac 2018

Pengarah,
Kolej Vokasional,
Seluruh Negeri Perak.

Pengetua,
Sekolah Menengah / Kolej Tingkatan Enam,
Seluruh Negeri Perak.

Tuan,

**PERINGATAN MESRA: PENGHANTARAN RINGKASAN PROJEK DAN DOKUMEN
PERTANDINGAN INOVASI SAINS DAN KEJURUTERAAN PERINGKAT
KEBANGSAAN 2018/2019**

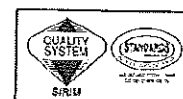
Dengan hormatnya saya merujuk perkara di atas. Surat Bahagian Kokurikulum dan Kesenian (BKK), Kementerian Pendidikan Malaysia (KPM), KPM.600.14/1/20 Jld.17 (98) bertarikh 17 Januari 2018 dan surat JPN Perak, J.Pel.PK (KOKU) 4531/5/14 Jld. 4 (46) bertarikh 24 Januari 2018 adalah berkaitan.

2. Dimaklumkan bahawa BKK KPM dengan afiliasi *Intel International Science and Engineering Fair (Intel ISEF)* akan menganjurkan Pertandingan Inovasi Sains dan Kejuruteraan Peringkat Kebangsaan 2018/2019. Sehubungan itu, jabatan ini memanjangkan jemputan penganjur kepada sekolah yang berminat untuk menyertai pertandingan tersebut.

3. Sekiranya berminat, pihak tuan perlu mematuhi semua peraturan yang terkandung dalam pekeliling dan kenyataan media terkini yang sedang berkuatkuasa antaranya:

- 3.1 Surat Pekeliling Ikhtisas Bil. 9/2000 (Panduan Keselamatan Diri Pelajar Semasa Pengajaran Pendidikan Jasmani dan Kesihatan serta Kegiatan Kokurikulum dan Sukan Di Dalam dan Di Luar Kawasan Sekolah)
- 3.2 Guru terlibat adalah tertakluk kepada Surat Pekeliling Ikhtisas Bil. 9/2016 (Pelaksanaan Kurikulum Sekolah Menengah Secara Berperingkat-peringkat Mulai Tahun 2017) berhubung penggunaan masa dan peruntukan waktu pengajaran dan pembelajaran mengikut jam kredit setahun.
- 3.3 Penglibatan guru juga adalah secara sukarela dan tanpa paksaan tertakluk kepada Surat Siaran KPM Bil. 2/2016 (Peringatan Pelaksanaan Bekerja Lima Hari Seminggu).

"CINTAILAH BAHASA KITA"
(Sila catatkan rujukan pejabat ini apabila berhubung)



CERTIFIED TO ISO 9001:2008
CERT. NO.: AR 4185

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CERT. NO.: AR 4185

5. Setiap sekolah boleh menghantar lebih daripada satu pasukan tanpa had dengan mematuhi tarikh dan syarat yang ditetapkan agar dapat melancarkan proses semakan Pelan Penyelidikan Projek oleh panel penilai *Scientific Review Committee (SRC)*.

6. Bersama-sama ini dilampirkan maklumat dan borang-borang berkaitan.

- i. Jadual tindakan pertandingan
- ii. Borang Senarai Semak *Adult Sponsor* (Borang 1)
- iii. Borang Senarai Semak Murid (Borang 1A)
- iv. Borang *Research Plan / Project Summary Instruction*
- v. *Approval Form* (Borang 1B)
- vi. Borang Ringkasan Hantaran Projek ke KPM
- vii. Senarai Semak Dokumen ke JPN Perak

7. Semua kos berkaitan adalah ditanggung oleh pihak sekolah. Tiada unsur paksaan kepada pihak sekolah untuk menyertai pertandingan ini.

8. Pihak sekolah yang berminat perlu menghantar semua dokumen lengkap yang diperlukan dalam bentuk *hardcopy* dan *softcopy* sebelum 23 Mac 2018 ke alamat berikut:

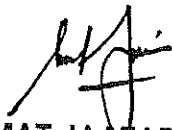
Unit Kokurikulum
Jabatan Pendidikan Negeri Perak
Jalan Tun Abdul Razak
30640 IPOH
(Sub-unit Sains dan Teknologi)
e-mel: nurainsham.ab@moe.gov.my

9. Sebarang pertanyaan, hubungi Puan Zalina Kamis (Penolong Pengarah Sains, Matematik dan Teknologi, BKK KPM) di talian 03-8872 1626 / 019-2508 926 / e-mel: zalina.kamis@moe.gov.my atau Puan Nur'ainsham binti Abu Bakar (Penyelia Kokurikulum Sains dan Teknologi JPN Perak) di talian 05-5015155 / 013-5188300. Maklumat lanjut, layari laman sesawang *Intel ISEF* www.societyforscience.org/isef

Sekian, terima kasih.

“BERKHIDMAT UNTUK NEGARA”
“PERPADUAN MELALUI KOKURIKULUM”

Saya yang menurut perintah, .



(HAJI MAT JAAFAR BIN MAT ZAIN, PPT.)
Ketua Sektor,
Sektor Pembangunan Kemanusiaan,
b.p. Pengarah Pendidikan Negeri Perak.

- s.k.
1. Pengarah Pendidikan Negeri Perak
 2. Pegawai Pendidikan Daerah Seluruh Negeri Perak

**SENARAI SEMAK DOKUMEN INTEL ISEF YANG PERLU DIHANTAR
KE JABATAN PENDIDIKAN NEGERI PERAK**

NAMA, ALAMAT DAN KOD SEKOLAH:.....

.....

.....

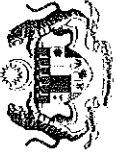
.....

DAERAH:.....

TAJUK PROJEK :.....

Bil.	Perkara	Tandakan <input type="checkbox"/>
1.	Borang Senarai Semak <i>Adult Sponsor</i> (Borang 1)	
2.	Borang Senarai Semak Murid (Borang 1A)	
3.	Borang <i>Research Plan Instruction</i>	
4.	<i>Approval Form</i> (Borang 1B)	
5.	Pelan Penyelidikan Projek	

***SILA GUNAKAN BORANG YANG BERLAINAN BAGI SEKOLAH YANG
MENGHANTAR LEBIH DARI SATU PASUKAN.**



KEMENTERIAN PENDIDIKAN MALAYSIA
BAHAGIAN KOKURIKULUM DAN KESENIAN

BORANG RINGKASAN HANTARAN PROJEK
PERTANDINGAN INOVASI DAN KEJURUTERAAN INTEL-ISEF 2018/2019

NEGERI : PERAK DARUL RIDZUAN

BIL	NEGERI	NAMA SEKOLAH	TAJUK	BIDANG	KATEGORI	NAMA PESERTA DAN NO. K/P	GURU PENYELARAS / NO. TEL	NO. TEL / FAX
1	PERAK							
2	PERAK							
3	PERAK							
4	PERAK							

Jadual Tindakan Pertandingan INTEL-ISEF 2017-2018

No	Perkara	2018												2019			Catatan		
		Jan	Feb	Mac	Apr	Mei	Jun	Jul	Ogos	Sept	Okt	Nov	Dis	Jan	Feb	Mac		April	Mei
1	Surat kepada JPN i. Hantar borang IA dan 1B ii. Plan Penyelidikan iii. Senarai semak <i>Adult Sponsor</i> iv. Penghantaran balik borang IA, 1B, Pelan Penyelidikan dan senarai semak <i>Adult Sponsor</i>																		
2	Mesyuarat Pertama SRC																		Minggu ke 2
3	Penyelidikan bermula (yang tidak melibatkan manusia, haiwan dan PHBA)																		PHBA- Potentially Hazardous Biological Agent
4	Penyerahan Plan Penyelidikan & Borang IA kepada murid (selepas pengesahan SRC)																		Minggu ke 3
5	Penyelidikan bermula (yang melibatkan manusia atau haiwan vertebrata dan PHBA sebagai subjek)																		Minggu ke 4
6	Penerimaan <i>Research Abstract</i> (250 patah perkataan)																		Minggu ke 4
7	Mesyuarat kedua SRC (Penyaringan projek)																		Minggu ke 2
8	Pameran Inovasi dan Kejuruteraan Peringkat Kebangsaan																		2 - 4 November 2018 (KLESF 2018)
9	Pertandingan INTEL-ISEF 2017 (USA)																		May 12 - 17, 2019 Phoenix, Arizona, Pennsylvania USA

Checklist for Adult Sponsor (1)

This completed form is required for ALL projects.

To be completed by the Adult Sponsor in collaboration with the student researcher(s):

Student's Name(s): _____

Project Title: _____

1. I have reviewed the Intel ISEF Rules and Guidelines.
2. I have reviewed the student's completed Student Checklist (1A) and Research Plan/Project Summary.
3. I have worked with the student and we have discussed the possible risks involved in the project.
4. The project involves one or more of the following and requires prior approval by an SRC, IRB, IACUC or IBC:

<input type="checkbox"/> Humans	Potentially Hazardous Biological Agents
<input type="checkbox"/> Vertebrate Animals	<input type="checkbox"/> Microorganisms <input type="checkbox"/> rDNA <input type="checkbox"/> Tissues
5. Items to be completed for ALL PROJECTS

<input type="checkbox"/> Adult Sponsor Checklist (1)	<input type="checkbox"/> Research Plan/Project Summary
<input type="checkbox"/> Student Checklist (1A)	<input type="checkbox"/> Approval Form (1B)
<input type="checkbox"/> Regulated Research Institutional/Industrial Setting Form (1C) (when applicable; after completed experiment)	
<input type="checkbox"/> Continuation/Research Progression Form (7) (when applicable)	

Additional forms required if the project includes the use of one or more of the following (check all that apply):

- Humans**, including student designed inventions/prototypes. (Requires prior approval by an Institutional Review Board (IRB); see full text of the rules.)
 - Human Participants Form (4) or appropriate Institutional IRB documentation
 - Sample of Informed Consent Form (when applicable and/or required by the IRB)
 - Qualified Scientist Form (2) (when applicable and/or required by the IRB)
- Vertebrate Animals** (Requires prior approval, see full text of the rules.)
 - Vertebrate Animal Form (5A)- for projects conducted in a school/home/field research site (SRC prior approval required.)
 - Vertebrate Animal Form (5B)- for projects conducted at a Regulated Research Institution. (Institutional Animal Care and Use Committee (IACUC) approval required prior experimentation.)
 - Qualified Scientist Form (2) (Required for all vertebrate animal projects at a regulated research site or when applicable)
- Potentially Hazardous Biological Agents** (Requires prior approval by SRC, IACUC or Institutional Biosafety Committee (IBC), see full text of the rules.)
 - Potentially Hazardous Biological Agents Risk Assessment Form (6A)
 - Human and Vertebrate Animal Tissue Form (6B) - to be completed in addition to Form 6A when project involves the use of fresh or frozen tissue, primary cell cultures, blood, blood products and body fluids.
 - Qualified Scientist Form (2) (when applicable)
 - The following are exempt from prior review but require a Risk Assessment Form 3: projects involving protists, archae and similar microorganisms, for projects using manure for composting, fuel production or other non-culturing experiments, -projects using color change coliform water test kits, microbial fuel cells, and projects involving decomposing vertebrate organisms.
- Hazardous Chemicals, Activities and Devices** (No SRC prior approval required, see full text of the rules.)
 - Risk Assessment Form (3) (have up with potentially hazardous biological agents.)
 - Qualified Scientist Form (2) (required for projects involving DEA-controlled substances or when applicable)

Adult Sponsor's Printed Name _____ Signature _____ Date of Review _____

Phone _____ Email _____

Student Checklist (1A)

This form is required for ALL projects.

1. a. Student/ Team Leader: _____ Grade: _____
Email: _____ Phone: _____
b. Team Member: _____ c. Team Member: _____

2. Title of Project:

3. School: _____ School Phone: _____
School Address: _____

4. Adult Sponsor: _____ Phone/Email: _____

5. Does this project need SRC/IRB/IACUC or other pre-approval? Yes No Tentative start date: _____

6. Is this a continuation/progression from a previous year? Yes No
If Yes:
a. Attach the previous year's Abstract and Research Plan/Project Summary
b. Explain how this project is new and different from previous years on Continuation/Research Progression Form (7)

7. This year's laboratory experiment/data collection:

Actual Start Date: (mm/dd/yy) _____ End Date: (mm/dd/yy) _____

8. Where will you conduct your experimentation? (check all that apply)
 Research Institution School Field Home Other: _____

9. List name and address of all non-home and non-school work site(s):
Name: _____
Address: _____

Phone/
email _____

10. Complete a Research Plan/Project Summary following the Research Plan/Project Summary instructions and attach to this form.
11. An abstract is required for all projects after experimentation.

Research Plan/Project Summary Instructions

A complete Research Plan/Project Summary is required for ALL projects and must accompany Student Checklist (1A).

1. All projects must have a Research Plan/Project Summary
 - a. Written prior to experimentation following the instructions below to detail the rationale, research question(s), methodology, and risk assessment of the proposed research.
 - b. If changes are made during the research, such changes can be added to the original research plan as an addendum, recognizing that some changes may require returning to the IRB or SRC for appropriate review and approvals. If no additional approvals are required, this addendum serves as a project summary to explain research that was conducted.
 - c. If no changes are made from the original research plan, no project summary is required.
2. Some studies, such as an engineering design or mathematics projects, will be less detailed in the initial project plan and will change through the course of research. If such changes occur, a project summary that explains what was done is required and can be appended to the original research plan.
3. The Research Plan/Project Summary should include the following:
 - a. **RATIONALE:** Include a brief synopsis of the background that supports your research problem and explain why this research is important and if applicable, explain any societal impact of your research.
 - b. **RESEARCH QUESTION(S), HYPOTHESIS(ES), ENGINEERING GOAL(S), EXPECTED OUTCOMES:** How is this based on the rationale described above?
 - c. Describe the following in detail:
 - **Procedures:** Detail all procedures and experimental design including methods for data collection. Describe only your project. Do not include work done by mentor or others.
 - **Risk and Safety:** Identify any potential risks and safety precautions needed.
 - **Data Analysis:** Describe the procedures you will use to analyze the data/results.
 - d. **BIBLIOGRAPHY:** List major references (e.g. science journal articles, books, internet sites) from your literature review. If you plan to use vertebrate animals, one of these references must be an animal care reference.

Items 1–4 below are subject-specific guidelines for additional items to be included in your research plan/project summary as applicable.

1. Human participants research:
 - a. **Participants:** Describe age range, gender, racial/ethnic composition of participants. Identify vulnerable populations (minors, pregnant women, prisoners, mentally disabled or economically disadvantaged).
 - b. **Recruitment:** Where will you find your participants? How will they be invited to participate?
 - c. **Methods:** What will participants be asked to do? Will you use any surveys, questionnaires or tests? What is the frequency and length of time involved for each subject?
 - d. **Risk Assessment:** What are the risks or potential discomforts (physical, psychological, time involved, social, legal, etc.) to participants? How will you minimize risks? List any benefits to society or participants.
 - e. **Protection of Privacy:** Will identifiable information (e.g., names, telephone numbers, birth dates, email addresses) be collected? Will data be confidential/anonymous? If anonymous, describe how the data will be collected. If not anonymous, what procedures are in place for safeguarding confidentiality? Where will data be stored? Who will have access to the data? What will you do with the data after the study?
 - f. **Informed Consent Process:** Describe how you will inform participants about the purpose of the study, what they will be asked to do, that their participation is voluntary and they have the right to stop at any time.
2. Vertebrate animal research:
 - a. Discuss potential **ALTERNATIVES** to vertebrate animal use and present justification for use of vertebrates.
 - b. Explain potential impact or contribution of this research.
 - c. Detail all procedures to be used, including methods used to minimize potential discomfort, distress, pain and injury to the animals and detailed chemical concentrations and drug dosages.
 - d. Detail animal numbers, species, strain, sex, age, source, etc., include justification of the numbers planned.
 - e. Describe housing and oversight of daily care
 - f. Discuss disposition of the animals at the termination of the study.
3. Potentially hazardous biological agents research:
 - a. Give source of the organism and describe BSL assessment process and BSL determination.
 - b. Detail safety precautions and discuss methods of disposal.
4. Hazardous chemicals, activities & devices:
 - Describe Risk Assessment process, supervision, safety precautions and methods of disposal.

Approval Form (1B)

A completed form is required for each student, including all team members.

1. To Be Completed by Student and Parent

a. Student Acknowledgment:

- I understand the risks and possible dangers to me of the proposed research plan.
- I have read the Intel ISEF Rules and Guidelines and will adhere to all International Rules when conducting this research.
- I have read and will abide by the following Ethics statement

Scientific fraud and misconduct are not condoned at any level of research or competition. Such practices include but are not limited to plagiarism, forgery, use or presentation of other researcher's work as one's own, and fabrication of data. Fraudulent projects will fail to qualify for competition in affiliated fairs and the Intel ISEF.

Student's Printed Name

Signature

Date Acknowledged (mm/dd/yy)
(Must be prior to experimentation.)

b. Parent/Guardian Approval: I have read and understand the risks and possible dangers involved in the Research Plan/Project Summary. I consent to my child participating in this research.

Parent/Guardian's Printed Name

Signature

Date Acknowledged (mm/dd/yy)
(Must be prior to experimentation.)

2. To be completed by the local or affiliated Fair SRC

(Required for projects requiring prior SRC/IRB APPROVAL. Sign 2a or 2b as appropriate.)

a. Required for projects that need prior SRC/IRB approval BEFORE experimentation (humans, vertebrates or potentially hazardous biological agents).

The SRC/IRB has carefully studied this project's Research Plan/Project Summary and all the required forms are included. My signature indicates approval of the Research Plan/Project Summary before the student begins experimentation.

SRC/IRB Chair's Printed Name

Signature

Date of Approval (mm/dd/yy)
(Must be prior to experimentation.)

OR

b. Required for research conducted at all Regulated Research Institutions with no prior fair SRC/IRB approval.

This project was conducted at a regulated research institution (not home or high school, etc.), was reviewed and approved by the proper institutional board before experimentation and complies with the Intel ISEF Rules. Attach (1C) and any required institutional approvals (e.g. IACUC, IRB).

SRC Chair's Printed Name

Signature

Date of Approval (mm/dd/yy)

3. Final Intel ISEF Affiliated Fair SRC Approval (Required for ALL Projects)

SRC Approval After Experimentation and Before Competition at Regional/State/National Fair

I certify that this project adheres to the approved Research Plan/Project Summary and complies with all Intel ISEF Rules.

Regional SRC Chair's Printed Name

Signature

Date of Approval

State/National SRC Chair's Printed Name
(where applicable)

Signature

Date of Approval

**SENARAI SEMAK DOKUMEN INTEL ISEF YANG PERLU DIHANTAR
KE JABATAN PENDIDIKAN NEGERI PERAK**

NAMA, ALAMAT DAN KOD SEKOLAH:.....

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.....

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DAERAH:.....

TAJUK PROJEK :.....

Bil.	Perkara	Tandakan \checkmark
1.	Borang Senarai Semak <i>Adult Sponsor</i> (Borang 1)	
2.	Borang Senarai Semak Murid (Borang 1A)	
3.	Borang <i>Research Plan Instruction</i>	
4.	<i>Approval Form</i> (Borang 1B)	
5.	Pelan Penyelidikan Projek	

***SILA GUNAKAN BORANG YANG BERLAINAN BAGI SEKOLAH YANG
MENGHANTAR LEBIH DARI SATU PASUKAN.**